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# WILDLIFE REVIEW

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# WILDLIFE REVIEW

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor,
and Paul A. Stewart, former assistant editor.

## NATURAL RESOURCES & CLIMATE

Bannikov, A. G., and A. A. Sludskii. [THE INDEPENDENCE OF THE PALEARCTIC SEMI-DESERT FAUNISTIC COMPLEX.] In: (Zoogeography of the land.) (Tashkent). p. 21-22. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 6D29. In Russian.] WR 120: 2

Dorst, J. [INVENTORY AND BIOTYPES OF GAME IN FRANCE.] France, Min. de l'Agr. B. Tech. d'Inform. 188: 148-158. Mar./Apr. 1964. [From Bibliog. Agr. 29(8), 1965. In French.] WR 120: 2
"Forest resources and wildlife."

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Milton, Oliver M. B. SOME PROBLEMS OF WILDLIFE CONSERVATION IN SOUTHEAST ASIA. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 244-245. 1961. [From Biol. Abstr. 46(14), 1965.] WR 120: 2
[Am. Comm. Int. Wildl. Protect., Game Dep., Kuala Lumpur, Fed. Malaysia.]

Petrov, B. M. [GAME ANIMALS OF THE WESTERN SPURS OF THE TYAN'-SHAN' MOUNTAINS AND SOME QUESTIONS OF THEIR USE AND ENRICHING THE VARIETY.] In: (Zoogeography of the land.) (Tashkent). p. 224-225. 1963. [From Biol. Abstr. 46(12), 1965, from Referat. Zhur., Biol., 1964, no. 11I313. In Russian.] WR 120: 2

Pokrovskii, V. [GAME CONSERVATION PRACTICE IN LITHUANIA.] Okhota & Okhotnich'e Khoz. 12: 14-15. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 12I245. Transl. of Russian abstr.] WR 120: 2

Portenko, L. O. [PRINCIPLES OF THE NATURAL REGIONALIZATION OF PODOLIYA AND ADJACENT TERRITORIES.] In: (Data on the study of the natural resources of Podoliya.) (Ternopol'-Kremenets). p. 171-173. 1963. [From Biol. Abstr. 46 (6), 1965, from Referat. Zhur., Biol., 1964, no. 11I194. Transl. of Russian abstr.] WR 120: 2

Rustamov, A. K. [SOME IMMEDIATE TASKS OF A ZOOGEOGRAPHICAL STUDY OF LAND ANIMALS OF THE DESERTS OF CENTRAL ASIA.] In: (Zoogeography of the land.) (Tashkent). p. 262-263. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 7I272. In Russian.] WR 120: 2

## SOILS

Bramlett, Glenn L., and Howard T. Stoner. SOIL SURVEY OF GORDON COUNTY, GEORGIA. SCS, Ser. 1962, no. 9. i + 171 p., 13 figs. + single-fold maps based on aerial photos and bound in. Oct. 1965. Sold by Supt. Documents. WR 120: 2
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Dickey, Harold P., and others. SOIL SURVEY OF SEWARD COUNTY, KANSAS. SCS, Ser. 1961, no. 28. i + 51 p., 27 figs. + single-fold maps based on aerial photos and bound in. Sept. 1965. Sold by Supt. Documents. WR 120: 2
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McMullen, J. W., and others. SOIL SURVEY OF CALHOUN COUNTY, MISSISSIPPI. SCS, Ser. 1962, no. 3. i + 65 p., 9 figs. + single-fold maps based on aerial photos and bound in. Sept. 1965. Sold by Supt. Documents. WR 120: 2
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PLANTS--FLORAS, COMMUNITIES, TAXONOMY

Gullion, G. W. CONTRIBUTIONS TOWARD A FLORA OF NEVADA. NO. 49, WILDLIFE USES OF NEVADA PLANTS. U. S. Agr. Res. Serv. Natl. Arboretum Crops Res. Div. Contrib. Flora Nev. 49. 170 p. Apr. 1964. [From Bibliog. Agr. 28(8), 1964.] WR 120: 3

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Anonymous. [DATA ON THE ECOLOGY OF LAND VERTEBRATES OF KAZAKHSTAN. (MAMMALS AND BIRDS).] Akad. Nauk Kazakhsk. SSR (Alma-Ata). 211 p., illus. 1963. Price 1 ruble 55 kopecks. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 7I271K. In Russian.] WR 120: 3

Barr, Thomas C., Jr. STUDIES ON THE ECOLOGY OF THE MAMMOTH CAVE COMMUNITY. Bull. Nat. Speleol. Soc. 26(2): 70-71. 1964. [From Biol. Abstr. 46(5), 1965.] WR 120: 3
[Univ. Ky., Lexington.]

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[Entomol. Res. Div., USDA, Tifton, Ga.]

Chernov, Yu. I. [RELATIONSHIPS BETWEEN ZOOGEOGRAPHICAL ELEMENTS IN DIFFERENT TYPES OF GROUPINGS OF THE ANIMAL POPULATION IN THE TUNDRA ZONE.] In: (Zoogeography of the land.) (Tashkent). p. 347. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 6D30. In Russian.] WR 120: 3

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Krivoshchekov, G. M. [INTRASPECIFIC RELATIONS AND THE PROBLEM OF THE CONSERVATION OF NATURE.] In: (Problems of intraspecific relations of organisms.) Tomsk. Univ. (Tomsk). p. 29-31. 1962. [From Biol. Abstr. 46 (5), 1965, from Referat. Zhur., Biol., 1963, no. 8D22. Transl. of Russian abstr.] WR 120: 3

Kurentsov, A. I. [NOTES ON THE ZOOGEOGRAPHY OF KAMCHATKA.] Soobshch. Dal'nevost. Fil. Sibirsk Otd. Akad. Nauk SSSR 18: 97-100. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 4D56. Transl. of Russian abstr.] WR 120: 3

Lockie, J. D. THE BREEDING DENSITY OF THE GOLDEN EAGLE AND FOX IN RELATION TO FOOD SUPPLY IN WESTER ROSS, SCOTLAND. Scot. Nat. 71: 67-77. 1964. [From Ibis 107(4), 1965.] WR 120: 3
Abstract: Although wildlife, particularly red grouse Lagopus scoticus and mountain hares Lepus timidus, is much less abundant in northwest Scotland than it was a century ago, the golden eagle Aquila chrysaetos and the fox Vulpes vulpes have not decreased in numbers. The author suggests that this is due to the high density of sheep and deer carrion, which form the greater part of the diet of these predators, in the area.

Nekipelov, N. V. [DIFFERENCES IN THE SIZE OF MAMMALS AND BIRDS AND THE IMPORTANCE OF THIS PHENOMENON IN EPIZOOTIOLOGY.] Doklady Irkutsk Protivochumnogo Inst. 4: 106-116. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 24I257. In Russian.] WR 120: 4

Popov, V. A. [THE ANIMAL WORLD OF THE TATAR ASSR AND QUESTIONS OF ITS CONSERVATION.] Priroda Tatarii & ee Okhrana (Kazan') 1: 82-97. 1963. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 12I294. Transl. of Russian abstr.] WR 120: 4

Schönborn, W. VERGLEICHENDE ZOOZÖNOTISCHE UNTERSUCHUNGEN AN EXKREMENTEN, KADAVERN, HUTPILZEN UND VOGELNESTERN. [COMPARATIVE ZOOZONOTIC INVESTIGATIONS ON EXCREMENT, CARRION, MUSHROOMS AND BIRD NESTS.] Biol. Zentralbl. 82(2): 165-184. 1963. [From Biol. Abstr. 46(2), 1965. In German.] WR 120: 4

Zimina, R. P. [GEOGRAPHICAL PATTERNS IN THE DISTRIBUTION OF ANIMALS IN MOUNTAINOUS REGIONS (CARPATHIANS, BALKANS, CAUCASUS, TIEN-SHANS).] In: (Zoogeography of the land.) (Tashkent). p. 102-103. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 6D32. In Russian.] WR 120: 4

WILDLIFE--NATURAL AREAS & REFUGES

Hansen. [GAME PRESERVE ON FOREST NATURE TRAILS.] Allgem. Forstz. 19 (44/45): 682-683. 31 Oct. 1964. [From Bibliog. Agr. 29(4), 1965. In German.] WR 120: 4

Telegin, V. I. [NORTHERN RIVER VALLEYS: AREAS OF CONCENTRATION AND ROUTES FOR THE ADVANCEMENT OF TAIGA ANIMALS TO THE FAR NORTH.] Trudy Tomsk. Univ. 152: 343-349. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 7I274. Transl. of Russian abstr.] WR 120: 4

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Harber, D. D., and the Rarities Committee. REPORT ON RARE BIRDS IN GREAT BRITAIN IN 1964 (WITH 1963 ADDITIONS). British Birds 58(9): 353-372. Sept. 1965. WR 120: 4

Kumari, E. B. [PROBLEMS OF BIRD CONSERVATION IN THE BALTIC AREA.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 102-104. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 12I309. In Russian.] WR 120: 4

Myre, M. BREVES NOTAS SOBRE PROTECCAO DA NATUREZA NA PROVINCIA DE MOCAMBIQUE. [BRIEF NOTES ON NATURE PROTECTION IN THE PROVINCE OF MOZAMBIQUE.] Liga para a Protec. da Nat. P. 18. 28 p., map. 1964. [From Bibliog. Agr. 29 (8), 1965. In Portuguese.] WR 120: 4
"Includes reservations for protection of forests and flora."

Panov, E. N. [PRESERVE THE USSURIAN PLOVER.] Okhrana Prirody na Dal'nem Vostoke (Vladivostok) 1: 133-135. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 8I261. Transl. of Russian abstr.] WR 120: 4

Perfil'ev, V. I. [RARE BIRDS OF YAKUTIYA AND THEIR CONSERVATION.] In: (Problem of conservation in Yakutiya.) (Yakutsk). p. 135-139. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 8I260. Transl. of Russian abstr.] WR 120: 4

Rossmassler, W. [WILDLIFE PROTECTION AREAS.] Allgem. Forstz. 19(44/45): 674, 676. 31 Oct. 1964. [From Bibliog. Agr. 29(4), 1965. In German.] WR 120: 4

## WILDLIFE--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Bartholomew, G. A. THE ROLES OF PHYSIOLOGY AND BEHAVIOR IN THE MAINTENANCE OF HOMEOSTASIS IN THE DESERT ENVIRONMENT. Symp. Soc. Expt1. Biol. 18: 7-29. 1964. [From Ibis 107(4), 1965.] WR 120: 5

Abstract: A brief review of adaptations to heat and aridity in mammals, reptiles and birds.

Orfeev, Yu. V. [THE ADAPTIVE ROLE OF GREGARIOUS BEHAVIOR.] Doklady Akad. Nauk SSSR 152(4): 995-997. 1963. [From Biol. Abstr. 46(5), 1965. In Russian.] WR 120: 5

Simkin, G. N., and V. D. Il'ichev. [GEOGRAPHICAL ASPECTS OF BIOACOUSTICS.] In: (Zoogeography of the land.) (Tashkent). p. 276-278. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 6D28. In Russian.] WR 120: 5

Strel'nikov, I. D. [THE SIGNIFICANCE OF THE NERVOUS SYSTEM IN ANIMAL ECOLOGY.] Voprosy Ekologii. Kievsk. Univ. (Kiev) 4: 77-79. 1962. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 8D2. Transl. of Russian abstr.] WR 120: 5

## WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Azevedo, John A., Jr., Eldridge G. Hunt, and Leon A. Woods, Jr. PHYSIOLOGICAL EFFECTS OF DDT ON PHEASANTS. Calif. Fish & Game 51(4): 276-293, 7 figs. Oct. 1965. WR 120: 5

[Calif. Dept. Fish & Game, Sacramento.] Abstract: The effects of DDT on penned pheasants were studied. The insecticide was offered to test birds in pelleted and wheat diets. Diets were contaminated at levels of 10, 100, and 500 ppm DDT. Data were obtained on the influence of the contaminated diets on egg production, fertility and hatchability and the survival rate of chicks. Chronic toxicity of the DDT diets to breeding pheasants was recorded. Results demonstrated that 500 ppm diets were highly toxic to breeder pheasants. All hens fed DDT-contaminated diets passed residues into their eggs. Egg production, fertility, and hatchability were not affected at the contaminated diet levels fed. Chick mortalities were highest among young from parents receiving 500 ppm diets. Evidence was obtained suggesting DDT residue levels in the brain may be used as an indicator of DDT intoxication in pheasants.

Borg, K. [WILDLIFE AND ECONOMIC POISONS.] In: Sveriges Lantbruksforbund. Korrespondenskola. Ratt Bekampning. p. 146-161. 1964. [From Bibliog. Agr. 29(7), 1965. In Swedish.] WR 120: 5

Eiberle, K. [SOME REMARKS ON WILD LIFE MORTALITY CAUSED BY FARM MACHINES.] Schweiz. Z. f. Forstw. 116(6): 529-533. June 1965. [From Bibliog. Agr. 29 (10), 1965. In German.] WR 120: 5

Fal'kenshtein, B. Yu. [THE THEORETICAL BASES FOR AND SOME RESULTS OF STUDIES OF A CHEMICAL METHOD FOR PROTECTING PLANTS FROM RODENTS AND BIRDS.] Trudy Vses. Nauchn.-Issled. Inst. Zashchity Rast. 17: 49-79. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 24I273. Transl. of Russian abstr. Original with English summ.] WR 120: 5

Fowle, C. David. A PRELIMINARY REPORT ON THE EFFECTS OF PHOSPHAMIDON ON BIRD POPULATIONS IN CENTRAL NEW BRUNSWICK. Canadian Wildl. Serv. Occas. Paps. no. 7. 54 p., 18 figs. 1965. WR 120: 5

Summary: The primary purpose of this project was to assess the effects of phosphamidon on bird populations. It has been shown that: 1. Phosphamidon applied as it was in 1964 in the budworm control program is toxic to birds; 2. Birds are apparently incapacitated or killed mainly as a result of accumulating phosphamidon from sprayed vegetation in the first few hours after spraying. These results should not be used to condemn phosphamidon outright.

Under the operational conditions in 1964 phosphamidon killed some birds. We know nothing of what might happen if the dosage were altered, if it were applied earlier in the year, or sprayed in the evening instead of in the morning. We do not really understand how the birds pick up the poison. Certainly the results suggest that the compound should be used with extreme caution until we know more about it, but at the same time, we should recognize that by no means all the possibilities have been explored.

Guthrie, J. E. THE OCCURRENCE OF SODIUM-22 IN SOME SPECIES OF CANADIAN BIOTA. Canadian J. Zool. 43(5): 889-890. Sept. 1965. WR 120: 6
[Whiteshell Nuclear Res. Establishment, Pinawa, Manitoba.] Na-22 has been measured in samples of muscle tissue taken from red squirrel (Tamiasciurus sp.) and hare (Lepus americanus) but not in the flesh of the short-tailed weasel (Mustela erminea)

Hunt, Eldridge G. SIDE EFFECTS OF PEST CONTROL PROGRAMS ON WILDLIFE. Proc. Papers Ann. Conf. Calif. Mosquito Control Assoc. Inc. 31: 26-27. 1963. [From Biol. Abstr. 46(2), 1965.] WR 120: 6

Krieg, H. [NATURE CONSERVATION, FOREST AND HUNTING.] Kosmos 60(1): 11-14. Jan. 1964. [From Bibliog. Agr. 29(6), 1965. In German.] WR 120: 6
"Includes toxicity of pesticides to wildlife."

Lihnell, D. ["ADAPTED" SEED TREATMENT.] Sweden. Stat. Vaxtskyddsanst. Vaxtskyddsnot. 28(2): 37-39. 1964. [From Bibliog. Agr. 29(5), 1965. In Swedish.] WR 120: 6
"With reference to the toxicity of economic poisons to wildlife."

Lihnell, D. [CHEMICAL SEED TREATMENT UNDER DISCUSSION.] Sweden. Stat. Vaxtskyddsanst. Vaxtskyddsnot. 28(2): 19-21. 1964. [From Bibliog. Agr. 29 (5), 1965. In Swedish.] WR 120: 6
"Toxicity to wildlife."

McBay, L. Glenn, and Ralph H. Allen, Jr. THE EFFECTS OF FOREST TENT CATERPILLAR (MALACOSOMA DISSTRIA) CONTROL EXPERIMENT ON FISH AND WILDLIFE. J. Ala. Acad. Sci. 34(2): 58-64. 1963. [From Biol. Abstr. 46(9), 1965.] WR 120: 6

McKeever, S. COMPOUND 1080 AND FOREST REGENERATION: CHARACTERISTICS OF THE POISON IN RELATION TO BAIT SHYNESS, POISON SHYNESS, TOXICITY TO RODENTS, AND PHYTOTOXICITY TO CONIFER SEED. Calif. Dept. Conserv. Div. Forest. 18 p. 1964? [From Bibliog. Agr. 29(10), 1965.] WR 120: 6
"Research on protection of newly seeded forest areas."

Mendelssohn, H. MASS DESTRUCTION OF BIRDLIFE IN ISRAEL OWING TO SECONDARY POISONING FROM INSECTICIDES AND RODENTICIDES. Intern. Council Bird Preserv. B. 9: 69-70. 1963. [From Bibliog. Agr. 28(5), 1964.] WR 120: 6
Includes discussion, p. 74-77.

Moore, N. W. PESTICIDES AND BIRDS--A REVIEW OF THE SITUATION IN GREAT BRITAIN IN 1965. Bird Study 12(3): 222-252. Sept. 1965. WR 120: 6
[Monks Wood Exptl. Sta., Huntingdon, England.]

Moore, N. W. PESTICIDES AND THE CONSERVATION OF WILDLIFE ON FARMS AND IN GARDENS. Roy. Agr. Soc. Eng. J. 125: 73-77. 1964. [From Bibliog. Agr. 29 (7), 1965.] WR 120: 6

Ozburn, G. W., and F. O. Morrison. THE EFFECT OF DDT ON RESPIRATORY METABOLISM OF DDT-TOLERANT MICE (MUS MUSCULUS). Canadian J. Zool. 43(5): 709-717, 8 figs. Sept. 1965. WR 120: 7

[Lakehead Coll. Arts, Sci. & Technol., Port Arthur, Ontario.] Abstract: A comparison of respiratory rates between DDT-tolerant and non-DDT-tolerant white mice (Mus musculus) was found to indicate a definite physiological difference between the two laboratory colonies. This difference was found to be present between very young mice and disappeared with increasing age. On administration of 550 mg/kg DDT to the two groups of mice, this difference again reappeared.

Schindler. [USE OF TOXAPHENE IN FOREST.] Forst-Holzwirt 20(7): 155-156. 8 Apr. 1965. [From Bibliog. Agr. 29(11), 1965. In German.] WR 120: 7

## WILDLIFE--PARASITES & DISEASES

Lobry, M. A. [INFECTIOUS DISEASES OF DOMESTIC ANIMALS NOTED IN WILDLIFE OF AFRICA.] B. Epiz. Dis. Africa 12(1): 43-62. Mar. 1964. [From Bibliog. Agr. 28(8), 1964. In French with English summ.] WR 120: 7

## WILDLIFE--POPULATIONS & FLUCTUATIONS

Khusainov, A. [EFFECT OF NATURAL ENEMIES ON THE POPULATION SIZE OF MUSKRATS AND DIVING BIRDS.] Trudy Inst. Zool. Akad. Nauk Kazakhsk SSR 17: 214-221. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 13I246. Transl. of Russian abstr.] WR 120: 7

Nazarenko, L. F., and I. G. Gurskii. [CHANGES IN THE BOUNDARIES AND STRUCTURE OF THE RANGES OF GAME ANIMALS AND BIRDS OF THE NORTHWEST PART OF THE BLACK SEA AREA.] In: (Zoogeography of the land.) (Tashkent). p. 201-202. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I341. In Russian.] WR 120: 7

## WILDLIFE--TECHNIQUES

Dean, Frederick C., and Guy A. Gallaway. A FORTRAN PROGRAM FOR POPULATION STUDY WITH MINIMAL COMPUTER TRAINING. J. Wildl. Mgmt. 29(4): 892-894, 1 fig. Oct. 1965. WR 120: 7

[Univ. Alaska, College.] Abstract: A flexible FORTRAN II program for use in population studies is described. The program can be used after brief instruction regarding the IBM 1620 computer and the associated card reader and punches; no knowledge of programming is required. Variable parameters include age and sex distribution of the initial population; maturity limits for both sexes; frequency of reproduction for females and birthrate (each is variable by age of the female); proportion of females in each age-class that will breed; maximum number of females bred per male; proportional, density-dependent, and density-independent mortality on an age- and sex-specific basis and in various combinations, maximum length of life; and the length of the run. Certain variables may be changed in midrun. Output may be in the form of punched cards, typed sheets, or graphs and is detailed both within each age-class and for the population as a whole. The program is available from the University of Alaska Computer Center and will be submitted to the IBM 1620 Users Group Program Library.

Giles, R. H. TECHNIQUES USED IN DETERMINING ANIMAL POPULATIONS. West. Forest. Conserv. Assoc. West. Reforest. Coord. Com. Proc. Ann. Meeting. p. 48-51. 1964. [From Bibliog. Agr. 29(10), 1965.] WR 120: 7

Greer, J. Keever. A CAGE FOR SMALL INTRACTABLE ANIMALS. J. Wildl. Mgmt. 29(4): 895-896, 2 figs. Oct. 1965. WR 120: 8
[Mich. State Univ., East Lansing.] Abstract: A special cage was constructed to permit weighing, measuring food consumption, and collecting urine and feces of a grison (Galictis cuja) for extended periods without unduly disturbing the excitable animal. Plungers forced the animal into a removable weighing box, and a urine-feces collecting funnel made of lightweight plastic sheeting was attached to the cage.

Korytin, S. A. [THE RESULTS OF FURTHER TRIALS OF THE AROMATIC BAITS "AKRON," "RUMB," AND "ZVEROSOVKHOZNAYA IN TRAPPINGS (VARIOUS MAMMALS)".] Sbornik Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya Pushniny 4 (7): 16-20. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 16I307. Transl. of Russian abstr.] WR 120: 8

Martinson, R. Kahler. AUDIO-VISUAL FARM GAME SURVEYS, 1961. Game Res. Ohio 2: 1-6, 3 figs. Aug. 1963. WR 120: 8
[19 E. Villard, Dickinson, N. Dak.] Pheasant, rabbit and quail populations in Ohio.

Martinson, R. Kahler. RURAL MAIL CARRIER FARM GAME SURVEYS, 1961. Game Res. Ohio 2: 6-10, 1 fig. Aug. 1963. WR 120: 8
[19 E. Villard, Dickinson, N. Dak.] Pheasant, rabbit and quail populations in Ohio.

Miller, Donald Ray, Clifford Maguire, and Erven Heiman. AN ECONOMICAL, PORTABLE INTERCOMMUNICATION SYSTEM FOR AERIAL SURVEYS AND RECONNAISSANCE. J. Wildl. Mgmt. 29(4): 896-898, 1 fig. Oct. 1965. WR 120: 8
[Manitoba Wildl. Branch, Dept. Mines & Nat. Resources, The Pas.] Abstract: A portable intercommunication system has been developed for use during aerial wildlife surveys and reconnaissance. The three-station unit is economical, simple to maintain, and practical. It can be used in any small aircraft and does not affect the pilot's radio communication.

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WILDLIFE--INTRODUCTIONS

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## WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

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Tolebaev, A. K. [THE EFFECTIVENESS OF FUSED CYANIDE FOR THE CONTROL OF THE LARGE-TOOTHED SUSLIK.] Trudy Nauch.-Issled. Inst. Zashch. Rast. Kaz. SSR 7: 452-458. 1962. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 11I303. Transl. of Russian abstr.] WR 120: 14

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Yaremenko, N. E., and V. E. Sharkova. [PROTECTION OF GRAIN CROPS WITH ARSENIC PREPARATIONS.] Zashchita Rast. ot Vreditelei Boleznei 12: 21-23. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 14I302. Transl. of Russian abstr.] WR 120: 14

## WETLANDS & WILDLIFE

Bednarik, Karl E. MARSH MANAGEMENT TECHNIQUES, 1960. Game Res. Ohio 2: 132-144, 8 figs. Aug. 1963. WR 120: 14
[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: Four controlled-water-level marsh units in the Magee Marsh have been drawn down annually to enhance production of waterfowl food-producing plants. Flooding was used in 1960 to eradicate widespread encroachments of willow and poplar; extensive stands of cattail returned as a result. Soil samples from the East Marsh Unit polder were analyzed; their significance is discussed in relation to the findings of other workers. Soil profiling revealed Toledo silty clay loam, Willetot muck, and Wauseon loamy sand in the East Unit. Plant associations in the drawdown units are described.

Mulhern, T. D. MOSQUITO CONTROL TECHNOLOGY IN WILDLIFE AREAS. Calif. Vector Views 10(6): 39-41. June 1963. [From Bibliog. Agr. 28(5), 1964.] WR 120: 14
"Biological control, with chemical control supplementary."

Rees, Don M. COOPERATIVE RESEARCH ON WATER MANAGEMENT FOR WILDLIFE, MOSQUITO ABATEMENT AND OTHER BENEFICIAL USE. Mosquito News 25(2): 91-93. June 1965. WR 120: 14
[Univ. Utah, Salt Lake City.]

## FARMLAND & WILDLIFE

Derr, H. J. BETTER REPELLENT FOR DIRECT SEEDING. Tree Planters' Notes 61: 26-30. Oct. 1963. [From Bibliog. Agr. 29(8), 1965.] WR 120: 14
"Seed treatment for bird repellency."

## RANGELAND & WILDLIFE

Maloiy, Geoffrey M. O., and Harold F. Heady. GRAZING CONDITIONS IN KENYA MASAILAND. J. Range Mgmt. 18(5): 269-272, 2 figs. Sept. 1965. WR 120: 14
[Univ. British Columbia, Vancouver, B.C.] Highlight: Brief descriptions of landscape, herding methods, forage values, livestock numbers, efforts to control grazing, and livestock-game relationships are presented as background for a suggested range development program in this part of East Africa.

FORESTLAND--FORESTRY & ECOLOGY

Daburon, H. [APROPOS THE SMALL RODENTS OF THE FOREST.] Rev. Forest. Franc. 16(10): 756-761. Oct. 1964. [From Bibliog. Agr. 29(4), 1965. In French.] WR 120: 15

Della-Bianca, Lino, and Frank M. Johnson. EFFECT OF AN INTENSIVE CLEANING ON DEER-BROWSE PRODUCTION IN THE SOUTHERN APPALACHIANS. J. Wildl. Mgmt. 29(4): 729-733. Oct. 1965. WR 120: 15

[SE Forest Expt. Sta., Asheville, N. C.] Abstract: The objective of this study was to determine the effects of an intensive cleaning on browse production. All woody stems except selected crop trees were removed from a dense, 11-year-old hardwood sapling stand which developed after a clearcut. Significantly more browse occurred in treated than in untreated stands. Treated lower slopes contained 10 times more browse than upper ones (805 to 81 pounds per acre), but untreated stands had only 3 pounds per acre on both slope positions. A high-quality, mixed hardwood stand resulted, and a significant increase in browse production occurred.

Fuglenes, I., and J. Von Ubisch. [A CONTRIBUTION TO THE PROBLEM WILDLIFE-FORESTRY.] Norsk Skogbruk 10(17): 447-449. Sept. 1964. [From Bibliog. Agr. 29(5), 1965. In Norwegian.] WR 120: 15

Hesmer, H. [WILDLIFE AND FORESTRY IN EAST AFRICA.] Allgem. Forstz. 20(7): 84-86. 13 Feb. 1965. [From Bibliog. Agr. 29(6), 1965. In German.] WR 120: 15 "Kenya and Tanganyika."

Murphy, Dean A., and John H. Ehrenreich. EFFECTS OF TIMBER HARVEST AND STAND IMPROVEMENT ON FORAGE PRODUCTION. J. Wildl. Mgmt. 29(4): 734-739. Oct. 1965. WR 120: 15

[Mo. Conserv. Comm., Columbia.] Abstract: Production of understory vegetation was measured on undisturbed areas and on areas having logging and timber stand improvement during the past 10 years on National Forest lands in southern Missouri. There was an increase in vegetative production following logging and stand improvement, especially in the pine (Pinus echinata) forest type. Increases were not, however, as great as anticipated. The type of timber management practiced in the Ozarks during the past 10 years has created small openings which did not appreciably reduce the overall crown cover or basal area; thus, forage production on the area as a whole was not greatly increased. More intensive removal of overstory is recommended to obtain maximum increases in forage.

Sokolov, G. A. [PROBLEMS ON THE SIGNIFICANCE OF CONIFEROUS VEGETATION IN THE LIFE OF SOME GAME ANIMALS.] Trudy Inst. Lesa Drevesiny Sibirsk Otd. Akad. Nauk SSSR 58: 175-182. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 12I238. Transl. of Russian abstr.] WR 120: 15

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FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Amour, C. J. THE USE OF REPELLENTS FOR PREVENTING MAMMAL AND BIRD DAMAGE TO TREES AND SEED: A REVISION. Forestry Abstr. 24(4): 27-38. Oct. 1963. [From Bibliog. Agr. 28(2), 1964.] WR 120: 15

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Demleitner, S. [INDIVIDUAL PROTECTION OF THE CULTIVATION AND FENCE CONSTRUCTION.] Deut. Landtech. Z. 16(4): 294-297. Apr. 1965. [From Bibliog. Agr. 29(8), 1965. In German.] WR 120: 16
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Kulicke, H. [CONTROL OF MICE FOREST PESTS.] Sozialist. Forstwirt. 13(12): 376-379. Dec. 1963. [From Bibliog. Agr. 28(6), 1964. In German.] WR 120: 17

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Mantel, W. [REPORT ON BROWSE AND PEELING DAMAGES.] Allgem. Forstz. 19 (44/45): 678-679. 31 Oct. 1964. [From Bibliog. Agr. 29(4), 1965. In German.] WR 120: 17

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Rabbits used as test animals.

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Schulz, H. E. [THE EFFECTS OF CHEMICAL BITE PREVENTIVES IN THE GAME RESEARCH DISTRICTS WITH DIFFERENT SITES AND GAME STANDS.] Deut. Akad. Landwirtschaftswiss. Tagungsber. 62: 297-303. 1964. [From Bibliog. Agr. 29 (10), 1965. In German with English summ.] WR 120: 17
"Forest protection."

Sokolov, G. A., and A. I. Khlebnikov. [EFFECT OF CONCENTRATED TIMBER FELLING IN CEDAR FORESTS OF WESTERN SAYAN ON PRODUCTIVITY OF HUNTING GROUNDS.] Trudy Inst. Lesa Drevesiny Sibirsk Otd. Akad. Nauk SSSR 58: 183-189. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 12I237. Transl. of Russian abstr.] WR 120: 17



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Streitberger. [WILDLIFE DAMAGES ON CHRISTMAS TREES.] Allg. Forstz. 18 (40): 618-619. 5 Oct. 1963. [From Bibliog. Agr. 28(2), 1964. In German.] WR 120: 18

Suslik, V. [INJURIES CAUSED TO THE FORESTS BY SMALL RODENTS' OUTBREAK IN 1959-1960.] Czechoslovakia. Min. Zemedel. Lesn. a Vodniho Hospodar. Ust. Vedtech. Inform. Lesn. Casopis 36(8): 749-760. Aug. 1963. [From Bibliog. Agr. 28(2), 1964. In Czech with English summ.] WR 120: 18

Wadhwani, B. B. GOATS VERSUS FORESTS. N. Forest Rangers Coll. Ann. 17: 13-18. 1963/64. [From Bibliog. Agr. 29(4), 1965.] WR 120: 18

Zacok, S. [THE PROTECTION OF FOREST PLANTINGS AGAINST THE WILDLIFE.] Les (Bratislava) 20(12): 356-358. Dec. 1964. [From Bibliog. Agr. 29(8), 1965. In Czech.] WR 120: 18

Zaylskie, J., and W. C. Hickling. PROTECT TREES FROM RABBITS. N. Dak. Agr. Coll. Ext. C. A-410. 6 p. folder. Apr. 1963. [From Bibliog. Agr. 28(6), 1964.] WR 120: 18

## CONTROL OF VEGETATION WITH HERBICIDES, ETC.

Teeter, James W. EFFECTS OF SODIUM CHLORIDE ON THE SAGO PONDWEED. J. Wildl. Mgmt. 29(4): 838-845, 2 figs. Oct. 1965. WR 120: 18
[Bur. Sport Fisheries & Wildl., Decatur, Ala.] Abstract: Sago pondweed plants (Potamogeton pectinatus) at several stages of growth were subjected to various NaCl solutions to determine the influence of the NaCl concentrations on the plant growth and reproduction. Data obtained indicated that the tap water treatment produced maximum vegetative growth and seed production. Increasing NaCl solutions produced a proportional adverse effect upon the vegetative growth and seed production, but a NaCl concentration of 3,000 ppm stimulated the production and growth of tubers. Saline conditions above 9,000 ppm NaCl completely inhibited the growth of 1-week-old plants. Plants which were 4-8 weeks of age could produce new growth in NaCl concentrations of 12,000 ppm, but a concentration of 15,000 ppm reduced growth completely and proved fatal to many plants. The tap water treatment was shown to produce the maximum seed germination success, and a NaCl concentration of 3,000 ppm reduced the germination success by 50 percent. Concentrations above 15,000 ppm NaCl inhibited germination, but a 15 percent germination success could be obtained if the seeds were placed in tap water following the NaCl treatment for 28 days. Sago pondweed tubers exposed to NaCl concentrations of 3,000 ppm produced more new growth and more rhizome shoots than the tubers in any other treatment, indicating that the tubers obtained some beneficial effect from the low saline environment.

## MAMMALS--GENERAL

Bashenina, N. V. [SOME CHARACTERISTICS OF THE GEOGRAPHIC VARIABILITY OF ECOLOGICAL AND PHYSIOLOGICAL FEATURES IN SMALL TERRESTRIAL MAMMALS.] In: (Zoogeography of the land.) (Tashkent). p. 23-24. 1963. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1964, no. 6I306. In Russian.] WR 120: 18

Corbet, G. B. THE IDENTIFICATION OF BRITISH MAMMALS. British Museum (Nat. Hist., London). iii + 46 p., illus. 1964. Price 4s., paper. [From Biol. Abstr. 46(4), 1965.] WR 120: 18
The purpose of the booklet is to act as a reference on nomenclature and status and serve as a guide to identification of British mammals.

Dodge, Wendell E., and Dan L. Campbell. TWO TECHNIQUES TO REDUCE CAPTURE MORTALITY. J. Mammal. 46(4): 707. 30 Nov. 1965. WR 120: 19
[Denver Wildl. Res. Center, Denver, Colo.] Use of a 50% dextrose-water solution oral or rectal gavage on snowshoe hares, mountain beavers and Douglas squirrel and of oxygen to black-tailed deer.

Egoscue, Harold J. RECORDS OF SHREWS, VOLES, CHIPMUNKS, COTTONTAILS AND MOUNTAIN SHEEP FROM UTAH. J. Mammal. 46(4): 685-687. 30 Nov. 1965. WR 120: 19
[Univ. Utah, Dugway.] Notes on reproduction, extensions of geographic ranges and additional specimens of little-known species from Utah.

Ghosh, Pulak Kumar, and K. G. Purohit. A PRELIMINARY STUDY OF THE PLASMA PROTEINS OF SOME DESERT MAMMALS. Mammalia (Paris) 29(1): 29-34. Mar. 1965. [From J. Mammal. 46(4), 1965.] WR 120: 19

Hediger-Zurbuchen, K., and H. Hediger-Zurbuchen. EINIGE UNGEWOEHNLICHE LOKOMOTIONSWEISEN BEI SAEUGETIEREN. [SOME UNUSUAL TYPES OF LOCOMOTION IN MAMMALS.] Rev. Suisse Zool. 71(1): 299-310, illus. 1964. [From Biol. Abstr. 46(10), 1965. In German with English and French summ.] WR 120: 19

Ivanova, G. I. [COMPARATIVE CHARACTERIZATION OF THE FEEDING OF THE FOX, BADGER, AND RACCOON DOG (NYCTEREUTES PROCYONIDES) IN THE VORONEZH GAME PRESERVE.] Uch. Zap. Mosk. Gos. Pedagog. Inst. Im. Lenina 186: 210-256. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 3I285. Transl. of Russian abstr.] WR 120: 19

Ivanova, G. I. [EXPERIENCE IN COUNTING FOXES, BADGERS, AND RACCOON-DOGS IN THE VORONEZH PRESERVE.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 164-167. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 5I238. Transl. of Russian abstr.] WR 120: 19

Jewell, P. A., P. Keen, and E. H. Tong. THE USE OF THE MUSCLE RELAXANT SUXETHONIUM TO IMMOBILIZE CAPTIVE ANIMALS WITH THE PROJECTILE-SYRINGE RIFLE. J. Zool. (Proc. Zool. Soc. London) 146(3): 263-271, 1 fig.+ 2 pls. Oct. 1965. WR 120: 19
[Wellcome Inst. Comp. Physiol., Regent's Park, London, England.] Abstract: The short-acting muscle relaxant suxethonium (bis-ethyl succinylcholine chloride) has been used successfully to immobilize a number of domestic and zoo animals. It has been compared with suxamethonium, and acute experiments were carried out to provide information on its mode of action at the neuromuscular junction in ruminants. The species for which an appropriate dosage to produce immobilization has been found are: sheep, goat, dog, pig, red deer, Formosan deer, and collared peccary. A simple field respirator is described for the emergency resuscitation of animals. The problems relating to the use of this type of drug are discussed.

Larin, B. A. [THE RELATION BETWEEN MUSKRATS AND BEAVERS.] Sbornik Nauch.-Tekhn. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2(5): 16-17. 1961. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 11I324. Transl. of Russian abstr.] WR 120: 19

Letts, G. A. FERAL ANIMALS IN THE NORTHERN TERRITORY. Australian Vet. J. 40(3): 84-88. 1964. [From Biol. Abstr. 46(8), 1965.] WR 120: 19
[Anim. Ind. Br., Northern Ter. Admin., Darwin, Australia.] A brief description is given of introduced animals which have become feral in the Northern Territory (Australia), where large herds of feral Asian water buffaloes, and smaller herds of Balinese cattle exist. Camels, Timor ponies, donkeys, pigs and other imported animals have also established wild colonies.

Mech, L. David, Valerian B. Kuechle, Dwain W. Warner, and John R. Tester. A COLLAR FOR ATTACHING RADIO TRANSMITTERS TO RABBITS, HARES, AND RACCOONS. J. Wildl. Mgmt. 29(4): 898-902, 3 figs. Oct. 1965. WR 120: 20
[Univ. Minn., Minneapolis.] Abstract: A durable, waterproof transmitter-collar cast in a mold and made of dental acrylic has proven successful in field tests on cottontail rabbits (Sylvilagus floridanus), snowshoe hares (Lepus americanus), and raccoons (Procyon lotor). It is fitted to the individual animal and attached around the neck, rather than over the head. With modification, it can probably be adapted for use with many other species.

Osborn, Dale J. THE HARE, PORCUPINE, BEAVER, SQUIRRELS, JERBOAS, AND DORMICE OF TURKEY. Mammalia(Paris) 28(4): 573-592. Dec. 1964. [From J. Mammal. 46(4), 1965.] WR 120: 20

Pan, H. P., J. W. Caslick, D. T. Harke, and D. G. Decker. A SIMPLE ANIMAL SUPPORT FOR CONVENIENT WEIGHING. J. Wildl. Mgmt. 29(4): 890-891, 2 figs. Oct. 1965. WR 120: 20
[Patuxent Wildl. Res. Center, Gainesville, Fla.] Abstract: A simple animal support constructed of web belts to hold skittish pigs for weighing was developed. The support is easily made, noninjurious to the pigs, and compact, facilitating rapid, accurate weighing. With minor modifications, the support can probably be used in weighing other animals.

Pidoplichko, I. H. [NOTES ON A STUDY OF SMALL MAMMALIAN FAUNA BY ANALYSIS OF BIRD PELLETS.] Zbirnyk Prats' Zool. Muz. Akad. Nauk UKSSR 32: 3-28. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 9I241. Transl. of Russian abstr. Original in Ukranian with Russian summ.]
Based chiefly on work in the Ukraine.

Pokrovskii, V. S., and Yu. M. Shadilov. [IN SUPPORT OF EXPANDED MAMMAL TAGGING IN THE USSR.] Migratsii Zhivotnykh. Akad. Nauk SSSR (Moscow) 3: 5-9. 1962. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 11I219. Transl. of Russian abstr.] WR 120: 20

Polushina, N. A., G. A. Benedyuk, and A. F. Senik. [NOTES ON THE ESTIMATION OF THE NUMBER OF SMALL MAMMALS OF SOME TOPOGRAPHIC AREAS OF THE SOVIET CARPATHIANS.] In: (Zoogeography of the land.) (Tashkent). p. 230-231. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 9I243. In Russian.] WR 120: 20

Rudd, Robert L. WEIGHT AND GROWTH IN MALAYSIAN RAIN FOREST MAMMALS. J. Mammal. 46(4): 588-594, 4 figs. 30 Nov. 1965. WR 120: 20
[Univ. Calif., Davis.] Abstract: Body weights of 16 species of Malaysian rain forest mammals are recorded. These species are Hylomys suillus, Tupaia glis, Callosciurus caniceps, C. notatus, C. nigrovittatus, Sundasciurus tenuis, Rattus annandalei, R. muelleri, R. sabanus, R. rajah, R. surifer, R. cremoriventer, R. whiteheadi, R. edwardsi, R. bowersi and Chiropodomys gliroides. Sexual and individual variation of several species is discussed. Growth information for three species of Rattus based on individual marking and repeated capture is summarized and graphed.

Sionim, A. D. [THE SPECIAL ECOLOGICAL PHYSIOLOGY OF MAMMALS.] Akad. Nauk SSSR (Moscow-Leningrad). 498 p., illus. 1963. Price 2 roubles, 76 kopecks. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 23I218K. Transl. of Russian abstr.] WR 120: 20
This book surveys the normal physiological pattern of adaptation of mammals to the effects of the environment--temperature, humidity, lack of oxygen, the quantity and quality of food, and how it is obtained under experimental and natural conditions.

Sokur, I. T. [NEW DATA ON THE SMALL MAMMALS OF THE UKRAINE.] Zbirnyk Prats' Zool. Muz. Akad. Nauk UKSSR 32: 29-42. 1963. [From Biol. Abstr. 46 (5), 1965, from Referat. Zhur., Biol., 1964, no. 9I242. Transl. of Russian abstr. Original in Ukrainian with Russian summ.] WR 120: 21

Uspenskii, S. M., and L. K. Shaposhnikov. [PRESERVATION OF ANIMALS IN THE ARCTIC.] Priroda 6: 29-34. 1957. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1960, no. 13824. Transl. of Russian abstr.] WR 120: 21
Data are given on the propagation, dynamics, number, and preservation of the wild white bear, the wild northern deer, walrus, and other animals in the arctic areas of SSSR, Canada, and other countries.

Waring, George H. BEHAVIOR OF A MARMOT TOWARD A MARTEN. J. Mammal. 46(4): 681. 30 Nov. 1965. WR 120: 21
[Colo. State Univ., Fort Collins.]

Wodzicki, Kazimierz. INTRODUCED MAMMALS IN NEW ZEALAND FORESTS. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 252. 1961. [From Biol. Abstr. 46(14), 1965.] WR 120: 21
[Animal Ecol. Div., DSIR, Lower Hutt, New Zealand.]

## MAMMALS--FAUNAS AND MANUALS

Alekperov, Kh. M. [THE MAMMAL FAUNA OF SW AZERBAIDZHAN WITH REGARD TO FEATURES OF THE TERRAIN AND THE ACTIVITY OF MAN.] In: (Zoogeography of the land.) (Tashkent). p. 5-8. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 6I263. In Russian.] WR 120: 21

Baker, Rollin H., and Carleton J. Phillips. MAMMALS FROM EL NEVADO DE COLIMA, MEXICO. J. Mammal. 691-693. 30 Nov. 1965. WR 120: 21
[Mich State Univ., East Lansing.]

Hoffmeister, Donald F. MAMMALS AND LIFE ZONES: TIME FOR RE-EVALUATION. Plateau 37(2): 46-55. 1964. [From J. Mammal. 46(4), 1965.] WR 120: 21

Kuznetsov, B. A. [NOTES ON THE MAMMALIAN FAUNA OF CENTRAL ASIA.] Trudy Moscow Obshch. Ispit. Prirody (Biol.) 10: 116-156. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 9I252. Transl. of Russian abstr.] WR 120: 21
With a list of 182 spp. of mammals of Central Asia.

Markov, Heorhi, and K. A. Tatarinov. [MAMMAL FAUNA OF THE STARA PLANINA (BALKAN MTS) AND UKRAINIAN CARPATHIA.] Zbirnyk Prats' Zool. Muz. Akad. Nauk Ukrayins'k RSR 32: 43-49. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 6I259. Transl. of Russian abstr. Original with Russian summ.] WR 120: 21
A taxonomic list of spp. with indications of the frequency with which they are found in the Stara Planina (Bulgaria, 61 spp.) and in the Carpathians (Ukrainian SSR, 56 spp.). A bibliography includes 121 references.

Musso Q., Andres. LISTA DE LOS MAMÍFEROS CONOCIDOS DE LA ISLA DE MARGARITA. [LIST OF KNOWN MAMMALS FROM MARGARITA ISLAND (VENEZUELA).] Mem. Soc. Ciencias Nat. La Salle (Caracas) 23(63): 163-180. Sept.-Dec. 1962. [From J. Mammal. 46 (4), 1965. In Spanish.] WR 120: 21

Paradiso, John L., and Charles O. Handley, Jr. CHECKLIST OF MAMMALS OF ASSATEAGUE ISLAND. Chesapeake Sci. 6(3): 167-171. Sept. 1965. WR 120: 21
[Bird & Mammal Labs., U. S. Natl. Museum, Washington, D. C.] Abstract: Twenty-five mammal species are listed from Assateague Island, off the Atlantic Coast of Maryland and Virginia, of which 11 are native land species, 6 are feral or semi-feral forms introduced by man, and 8 are marine. The land species are discussed in relation to their habitats which include coastal dunes, fresh and salt water marshes, swamps and forests.

Ride, W. D. L. THE MAMMALS OF DEPUCH ISLAND. Spec. Publ. Western Australian Museum 2: 75-78. 31 Dec. 1964. [From J. Mammal. 46(4), 1965.] WR 120: 22

Saint Girons, M. C., and P. J. H. van Bree. NOTES SUR LES MAMMIFÈRES EN PROVENANCE DU DÉPARTEMENT DES PYRÉNÉES-ORIENTALES. IV.--LISTE PRÉLIMINAIRE DES MAMMIFÈRES DU MASSIF DU CARLIT. [NOTES ON THE MAMMALS OF PYRENEES-ORIENTALES (S.E. FRANCE). IV. PRELIMINARY LIST OF MAMMALS OF MASSIF DU CARLIT.] Vie & Milieu 15(2): 475-485. 1965. [From J. Mammal. 46(4), 1965. In French.] WR 120: 22

Shubin, I. G. [THE INDEPENDENCE OF THE MAMMALIAN FAUNISTIC COMPLEX OF THE STEPPE.] In: (Zoogeography of the land.) (Tashkent). p. 364. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 9I258. In Russian.] WR 120: 22

Voronov, V. G. [TERRESTRIAL GAME ANIMALS AND THEIR DISTRIBUTION ON THE KURILE ISLANDS.] Trudy Sakhalinsk Kompleksnogo Nauchn.-Issled. Inst. 14: 30-38. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 23I235. Transl. of Russian abstr.] WR 120: 22

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

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Afanas'ev, A. V. [CHANGES IN THE MAMMALIAN FAUNA OF TSELINNYI KRAI AS A RESULT OF THE RECLAMATION OF VIRGIN AND ABANDONED LANDS.] Izv. Akad. Nauk Kaz. SSR-Ser. Biol. Nauk 3: 32-41. 1963. [From Biol. Abstr. 46(8), 1965, from Referat. Zhur., Biol., 1964, no. 9I248. Transl. of Russian abstr.] WR 120: 22

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[Univ. Mich., Ann Arbor.] Abstract: A 5-year study of hibernating colonies of Myotis velifer in northwestern Texas was conducted by recapture of banded bats and by experimentation. Nearly 17,000 captures of 12,000 bats provided most information. The bats occur in small hibernating colonies of 1,000-5,000 and rarely make major movements during the winter. Movements within a cave and to adjacent caves are frequent, perhaps for the purpose of selecting sites where the temperature is suitable for maintaining a metabolic rate optimal for maximum energy conservation. Short movements of less than 100 miles occur in the spring from hibernacula to nurseries in warmer caves. Temperature, relative humidity and air movement all seem important in effecting stability of clusters of hibernating bats. Weight loss occurs throughout hibernation, but especially in the early months. Most temperatures of hibernating bats range from 1-10° C, which is similar to the range in ambient temperatures. Sex ratios are unbalanced in favor of females and several factors responsible for this imbalance are discussed. About 25% of banded bats were not recovered in the season immediately after banding or were recovered in nonconsecutive hibernating seasons. This fact introduces some error into estimated population loss. The mean duration of the presence of a bat in the hibernating populations is about 2 years; bats older than 5 years apparently make up a small fraction of the breeding population. Ninety-five per cent of the banded bats accounted for returned to the same area for hibernation. Quantitative data are provided for the population parameters discussed, and comparative data for other species are presented.

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## RABBITS AND PIKAS

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Felten, Heinz. FLUGHUNDE DER GATTUNG PTEROPUS VON NEUKALEDONIEN UND DEN LOYALTY-INSELN (MAMMALIA, CHIROPTERA). [FLYING FOXES OF THE GENUS PTEROPUS OF NEW CALEDONIA AND OF THE LOYALTY ISLANDS (MAMMALIA, CHIROPTERA).] Senckenbergiana Biol. Frankfurt am Main 45(6): 671-683. 21 Dec. 1964. [From J. Mammal. 46(4), 1965. In German.] WR 120: 29

Hart, J. S., Hermann Pohl, and J. S. Tener. SEASONAL ACCLIMATIZATION IN VARYING HARE (LEPUS AMERICANUS). Canadian J. Zool. 43(5): 731-744, 7 figs. + 1 fig. on 1 pl. Sept. 1965. WR 120: 29

[Natl. Res. Council, Ottawa, Canada.] Abstract: Wild hares were trapped in the vicinity of Ottawa, Canada, and tested during summer and winter. After recovery from implantation of subcutaneous and substernal thermocouples, measurements of oxygen uptake and body temperatures were made during successive stepwise lowering of ambient temperature from 20°C to -45°C over about 5 hours. Measurements were also made during stepwise elevation of temperature from 12°C to 38°C over a 5-hour period and a final single test was made at 40°C. Hares trapped during the winter had lower $O_2$ uptake than did summer-caught hares at temperatures below thermal neutrality. The change was very similar in magnitude to the seasonal change in insulation of the fur (27% greater in winter). The lower critical temperature was shifted from +10°C in summer hares to about -5°C in winter hares. No seasonal differences were noted in substernal temperatures, but subcutaneous temperatures were significantly higher in winter-caught animals. Colonic temperatures were higher than substernal temperatures at all ambient temperatures. Electromyograms recorded from the mid-back showed that shivering was greater in the cold during summer than during winter in accordance with the higher $O_2$ consumption at any given temperature. Shivering was also slightly greater during summer at the same level of $O_2$ consumption. Varying hares showed a considerable tolerance to elevation of temperature and a capacity to maintain approximate equality of body and ambient temperature at 40°C for some time through effective respiratory evaporative heat loss, which approached 100% of heat production. Stepwise elevation of ambient temperature did not reveal any seasonal differences in upper critical temperature (about 38°C) or in elevation of body temperature in spite of differences in insulation of the fur. A slightly greater proportion of the total heat loss was by evaporation during the summer. Caloric intake of captive hares outdoors was similar during winter and summer. It is concluded that seasonal acclimatization in the varying hare is largely insulative with respect to cold and that changes in heat tolerance are minor if present at all. Insulative and behavioral modifications appear to compensate for seasonal changes in temperature in the Ottawa area.

Hewson, R. POPULATION CHANGES IN THE MOUNTAIN HARE, LEPUS TIMIDUS L. J. Animal Ecol. 34(3): 587-600, 3 figs. Oct. 1965. WR 120: 29

[170 Mid Street, Keith, Banffshire, Scotland.] Summary: 1. A population of mountain hares on about 200 ha of moorland in Banffshire has been studied since 1955 by capturing and recapturing marked animals and by other methods. 2. An index of trapping showed a population increase from 1956 to 1958, followed by a decline in 1959 and a period of scarcity lasting until the end of 1962. Counts in parts of the study area confirmed the timing and extent of these changes. 3. Mountain hares appeared to be sedentary and population changes due to immigration and emigration were unlikely. 4. Hares were found dead most frequently in the early months of 1958 and 1959. Carcases showed heavy infestations of internal parasites, but hares killed in other years and in good condition showed slight to severe infestations. 5. Breeding success was high in the years when the population was declining or low. 6. Both adult and juvenile mortality were high throughout peak numbers and the decline. Annual adult mortality was estimated to be about 79%, and juvenile mortality 76% among leverets aged from about 2 months upwards. 7. Food shortage and disease (linked with heather damage due to weather) may have affected a high population at a critical season in 1958 and 1959.

Ito, S., T. Matsuyama, K. Utagawa, M. Nitto, S. Nagasaka, S. Fuji, and S. Matsubara. [ON THE PREVENTION OF DAMAGE DONE BY RABBITS.] Ringyo Gijitsu 253: 25-28. Apr. 1963. [From Bibliog. Agr. 28(4), 1964. In Japanese.] WR 120: 30
A panel discussion on damage done to forests.

Keith, Lloyd B. A LIVE SNARE AND A TAGGING SNARE FOR RABBITS. J. Wildl. Mgmt. 29(4): 877-880, 2 figs. Oct. 1965. WR 120: 30
[Univ. Wis., Madison.] Abstract: The choke snare was modified to develop a live snare which would catch snowshoe hares (Lepus americanus) and cottontail rabbits (Sylvilagus floridanus); this was done by limiting snare closure to a diameter which would hold an animal but not strangle it. In actual field tests, more than 50 percent of the animals caught were alive. A tagging snare was constructed to collar snowshoe hares for identification. Field tests resulted in 19 taggings and only 3 apparent failures. The snare provided a means for precensus marking without handling animals or checking sets daily.

Kline, Paul D. NOTES ON THE BIOLOGY OF THE JACKRABBIT IN IOWA. Proc. Iowa Acad. Sci. 70: 196-204. 1963. [From Biol. Abstr. 46(5), 1965.] WR 120: 30
[Iowa State Conserv. Comm., Des Moines.] "Lepus townsendii campanius."

Kline, Paul D. FACTORS INFLUENCING ROADSIDE COUNTS OF COTTONTAILS. J. Wildl. Mgmt. 29(4): 665-671, 4 figs. Oct. 1965. WR 120: 30
[Iowa State Conserv. Comm., Des Moines.] Abstract: Results are presented of 180 early morning cottontail (Sylvilagus floridanus) roadside surveys conducted over a single 30-mile route in east-central Iowa during a 3-year period, 1957-59. The effect of time of day, weather factors, and seasonal variation in early morning rabbit roadside activity are evaluated. Two seasonal peaks of cottontail observations occurred, one in January and February, and the other in June and July. During the winter, observations of cottontails decreased as sunrise approached. Frequency of cottontail observations during summer increased 30 minutes after sunrise and peaked between 5:30 and 6:00 AM. Frequency of observations declined in summer with increased wind velocity and with increased nebulosity. Observations increased with greater overnight decline in temperature. Cottontails probably are attracted for a time to road surfaces in summer because these surfaces are relatively warmer and drier than adjacent terrain. Such favorable road conditions develop following sunrise when nebulosity does not obstruct isolation and wind velocity is negligible, which may help to explain the peak in early morning activity apparently occurring during the summer. The peak in morning activity during August and September occurs before the roads are sufficiently warmed, and the rabbits are apparently not attracted. Wind acted as a deterrent to roadside activity of cottontails in winter, but snow depth was the dominant factor correlating with frequency of cottontails on the roads.

Mykytowycz, R. TERRITORIALITY IN RABBIT POPULATIONS. Australian Nat. Hist. 14(10): 326-329. June 1964. [From J. Mammal. 46(4), 1965.] WR 120: 30

Novikov, G. A., and E. K. Timofeeva. [INFORMATION ON THE ECOLOGY OF THE HARE (LEPUS EUROPAEUS) WHICH INHABITS FOREST-STEPPE OAK FORESTS.] Vestnik Leningr. Univ. No. 9 Ser. Biol. 2: 26-34, illus. 1964. [From Biol. Abstr. 46(13), 1965. In Russian with English summ.] WR 120: 30
A special "forest-population" of hares exists.

Ostapenko, M. M. [BIOLOGY OF LEPUS TOLAI IN UZBEKISTAN.] In: (Game animals in Uzbekistan.) Akad. Nauk UzSSR (Tashkent). p. 64-75. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 7I207. Transl. of Russian abstr.] WR 120: 30

Prakash, Ishwar. BIOLOGY OF LEPUS NIGRICOLLIS DAYANUS BLANFORD. Agr. Res. (India) 3(2): 141. 1963. [From Biol. Abstr. 46(11), 1965.] WR 120: 30
[Cent. Arid Zone Res. Inst., Jodhpur, India.]

Sadonou, Saig, and T. Narisawa. [THE RABBITS OF SADO.] Rinya Jiho 11(3): 22-25. 1963. [From Bibliog. Agr. 29(1), 1965. In Japanese.] WR 120: 31

Shubin, I. G. [THE RANGE OF OCHOTONA SP. AND FACTORS WHICH DETERMINE IT.] In: (Zoogeography of the land.) (Tashkent). p. 365-366. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 6I269. In Russian.] WR 120: 31

Stains, Howard J., and Ronald W. Turner. A DEVICE FOR AUTOMATICALLY FEEDING, AND COLLECTING THE FECES OF SMALL MAMMALS. Trans. Ill. State Acad. Sci. 57 (4): 278-280, illus. 1964. [From Biol. Abstr. 46(7), 1965.] WR 120: 31
[Southern Ill. Univ., Carbondale.] An automatic device was designed to feed two caged cottontail rabbits and collect fecal pellets hourly.

Trapp, Gene R., and Carolyn Trapp. ANOTHER VOCAL SOUND MADE BY SNOWSHOE HARES. J. Mammal. 46(4): 705. 30 Nov. 1965. WR 120: 31
[2532 Wayside Ave., Fort Worth, Texas.] To "grunting" and "screaming" is added the third sound--"clicking."

## RODENTS--MISCELLANEOUS

Alekperov, Kh. M., and S. N. Brofeeva. [THE ECOLOGY OF THE FIELD MOUSE (APODEMUS AGRARIUS PALL.) IN AZERBAIDZHAN.] Izvest. Akad. Nauk Azerbaidzhansk. SSR Ser. Biol. Med. Nauk 6: 29-37. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 14I290. Transl. of Russian abstr. Original in Russian with Azerbaidzhani summ.] WR 120: 31

Anderson, Arthur O., and Dorald M. Allred. KANGAROO RAT BURROWS AT THE NEVADA TEST SITE. Great Basin Naturalist 24(3-4): 93-101. 31 Dec. 1964. [From J. Mammal. 46(4), 1965.] WR 120: 31

Aumann, Glenn D. MICROTINE ABUNDANCE AND SOIL SODIUM LEVELS. J. Mammal. 46(4): 594-604, 1 fig. 30 Nov. 1965. WR 120: 31
[Univ. Houston, Houston, Texas.] Abstract: A collection of 65 published records of population densities of microtine rodents, including individual studies of 130 populations, reveals a marked difference in peak densities reached according to geographical area. An apparent correlation exists between the relative abundance of sodium in the soil and the peak densities which microtines reach. Densities of over 1,000 per acre are frequently reported from high sodium areas, while they rarely exceed 100 in low sodium areas. Population fluctuations occur regardless of sodium level, but the densities reached at population peaks are characteristically many times higher in regions of high soil sodium than in regions of low soil sodium. [Long bibliography.]

Baker, Rollin H., and Michael K. Petersen. NOTES ON A CLIMBING RAT, TYLOMYS, FROM OAXACA, MEXICO. J. Mammal. 46(4): 694-695, 1 pl. 30 Nov. 1965. WR 120: 31
[Mich. State Univ., East Lansing.]

Barsova, L. I., and T. A. Novikova. [THE ECOLOGY OF MURINE RODENTS IN THE CEDAR TAIGA OF THE NORTHEASTERN ALTAI.] In: (Problems of zoological studies in Siberia.) Knigoizdat (Gorno-Altaisk). p. 20-22. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 14I288. Transl. of Russian abstr.] WR 120: 31

Bashenina, N. V. [THE ECOLOGY OF MICROTUS ARVALIS AND SOME CHARACTERISTICS OF ITS GEOGRAPHIC VARIABILITY.] Moscow Univ. (Moscow). 308 p., illus. 1962. Price 1 ruble 46 kopecks. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 10I234K. Transl. of Russian abstr.] WR 120: 31

Bawdon, E. D. A HERMAPHRODITIC KANGAROO RAT. J. Mammal. 46(4): 684, 1 fig. 30 Nov. 1965. WR 120: 32
[Eastern Ariz. Jr. Coll., Thatcher.] "Dipodomys ordii."

Bol'shakov, V. N. [NEW HABITATS OF CLETHRIONOMYS RUFOCANUS SUND. IN THE SOUTHERN URALS.] Zool. Zhur. 42(8): 1272-1273, illus. 1963. [In Russian with English summ.] WR 120: 32

Brom, I. P. [STANDARDS FOR CALCULATING RODENT POPULATION SIZES AND THE RELIABILITY OF THE RESULTS.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 184-191. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 4I234. Transl. of Russian abstr.] WR 120: 32

Brooks, Joe E., and Allan M. Barnes. RECOGNITION OF HOUSEHOLD INVADING RODENTS IN CALIFORNIA. Calif. Vector Views 11(12): 65-70. Dec. 1964. [From J. Mammal. 46(4), 1965.] WR 120: 32

Cameron, Austin W. COMPETITIVE EXCLUSION BETWEEN THE RODENT GENERA MICROTUS AND CLETHRIONOMYS. Evolution 18(4): 630-634. 28 Jan. 1965. [From J. Mammal. 46(4), 1965.] WR 120: 32

Dubost, G. RECHERCHES SUR LA FAUNE DES RONGERUS DE LA LORAINE: REGION DE NANCY ET MASSIF DES VOSGES. [RESEARCH ON THE RODENT FAUNA OF LORRAINE: REGION OF NANCY AND THE VOSGES MOUNTAINS.] Bull. Soc. Lorraine Sci. 2(1): 7-20. 1962. [From Biol. Abstr. 46(1), 1965. In French.] WR 120: 32
[Fac. Sci., Nancy, France.]

Eigelis, B. K., T. I. Lobanova, and M. G. Akhundov. [RANGES OF GERBILS IN THE AZERBAIDZHAN SSR AND FACTORS WHICH DETERMINE THEIR BOUNDARIES.] In: (Zoogeography of the land.) (Tashkent). p. 369-371. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 6I265. In Russian.] WR 120: 32

Elliott, F. C. THE MEADOW VOLE (MICROTUS PENNSYLVANICUS) AS A BIOASSAY TEST ORGANISM FOR INDIVIDUAL FORAGE PLANTS. Mich. Agr. Expt. Sta. Quart. Bull. 46(1): 58-72. Aug. 1963. [From Bibliog. Agr. 28(6), 1964.] WR 120: 32

Fedosenko, A. K., and A. D. Bernshtein. [DATA ON THE REPRODUCTION OF THE TYAN'SHAN WOOD VOLE IN THE TRANS-ILI ALATAU.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR 20: 153-163. 1963. [From Biol. Abstr. 46(8), 1965, from Referat. Zhur., Biol., 1964, no. 4I298. Transl. of Russian abstr.] WR 120: 32

Fisler, George F. A CAPTIVE MOUNTAIN BEAVER. J. Mammal. 46(4): 707-709. 30 Nov. 1965. WR 120: 32
[San Fernando Valley State Coll., Northridge, Calif.]

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[Buffalo Zool. Gardens, Buffalo, N. Y.]

Gambaryan, P. P., and S. B. Papanyan. [A DESCRIPTION OF THE MIDDAY GERBIL (MERIONES MERIDIANUS DAHLI).] Izv. Akad. Nauk Arm. SSR Biol. Nauk 17(7): 91-96, illus. 1964. [From Biol. Abstr. 46(12), 1965. In Russian.] WR 120: 32
[Zool. Inst., Acad. Sci. Armenian SSR, Erevan, Armenian SSR.]

Gambino, J. J., and R. G. Lindberg. REPRODUCTION OF PEROGNATHUS IN CAPTIVITY. Progr. Rept., Investigation of Perognathus as an experimental organism for research in space biology, Northrop Space Lab., Hawthorne, California. p. 1-27, illus. 1965. [From J. Mammal. 46(4), 1965.] WR 120: 32

Garbuzov, V. K. [DISTRIBUTION AND STATION POSITION OF SPALAX GIGANTEUS NEHR. IN THE AKTYUBINSK DRY STEPPES.] Zool. Zhur. 43(1): 108-114, illus., maps. 1964. [From Biol. Abstr. 46(8), 1965. In Russian with English summ.] WR 120: 33

Genelly, Richard E. ECOLOGY OF THE COMMON MOLE-RAT (CRYPTOMYS HOTTENTOTUS) IN RHODESIA. J. Mammal. 46(4): 647-665, 7 figs. 30 Nov. 1965. WR 120: 33
[Humboldt State Coll., Arcata, Calif.] Abstract: The common mole-rat (Cryptomys hottentotus) was studied for 8 months, principally on the campus of the University College of Rhodesia and Nyasaland at Salisbury in Southern Rhodesia. Eighty-eight mole-rats were captured with snares set below ground in tunnel systems dug by the animals in search of food. Small mounds are formed resembling those of moles and pocket gophers in North America. When the ground is moist and easily dug, much time is spent in storing food within an intricate home burrow system beneath large termite hills. In the dry season as the ground becomes dry and hard at the surface, the mole-rats no longer push up mounds but redistribute the loose soil in abandoned tunnels. During the rainy season much of their habitat is flooded and they are restricted to the home burrows. Captive mole-rats of the genera Cryptomys and Heliophobius dug with the incisor teeth, and used the feet and tail to push loose earth along the tunnel and onto the surface of the ground. Vibratory movements of the hind limbs tamped the loose earth into a plug that blocked the burrow opening. The mole-rats ate, almost exclusively, the bulbous bases of black seed grass (Alloteropsis semialata). A density of three mole-rats per acre was estimated for the 26.8-acre study plot. The scarcity of pregnant females and the absence of sperm in males taken during the study indicate that the breeding season must occur in the middle of the rainy season. Small litters, a large number of adults and the closed burrow system all indicate a low mortality rate in the species. The low mobility and high degree of isolation of local populations are associated with a high degree of variability in coat color and head markings.

Gladkina, T. S. [THE WATER RAT.] In: (Distribution of pests and disease of agricultural crops in the RSFSR in 1961 and forecast of their appearance in 1962.) Sel'khozizdat (Leningrad). p. 16-18. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 14I294. Transl. of Russian abstr.] WR 120: 33

Gladkina, T. S., and M. N. Meier. [THE EFFECTS OF ECOLOGICAL CONDITIONS AND CONTROL MEASURES ON THE AGE COMPOSITION OF THE LITTLE SUSLIK POPULATION.] Trudy Vses. Nauchn.-Issled. Inst. Zashchity Rast. 12: 189-200. 1958. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1960, no. 50809. Transl. of Russian abstr.] WR 120: 33

Gladkina, T. S., M. N. Meiner, and T. M. Mokeeva. [THE INTRASPECIFIC VARIABILITY OF LAGURUS LAGURUS AND ITS ADAPTIVE SIGNIFICANCE.] Trudy 15 Sesii Nauchn.-Issled. Inst. Zashchity Rast. 18: 123-151. 1963. [From Biol. Abstr. 46(9), 1965, from Referat. Zhur., Biol., 1964, no. 1I221. Transl. of Russian abstr. Original with English summ.] WR 120: 33

Glotov, I. N. [THE EXTERMINATION OF RODENTS ON THE SHORES OF A LAKE AS A PROPHYLACTIC MEASURE AGAINST TULAREMIA IN A MUSKRAT FARM.] Sbornik Nauchn. Tekh. Inform. Vses. Nauchn. Issled. Inst. Zhivotnogo Syr'ya Pushniny 3(6): 43-48. 1961. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 2I262. Transl. of Russian abstr.] WR 120: 33

Goertz, John W. ADRENAL AND SPLEEN WEIGHTS IN COTTON RATS IN RELATION TO AGE, SEX AND SEASON. J. Mammal. 46(4): 699-700. 30 Nov. 1965. WR 120: 33
[La. Polytech. Inst., Ruston.]



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Goertz, John W. REPRODUCTIVE VARIATION IN COTTON RATS. Am. Midland Nat. 74 (2): 329-340. Oct. 1965. WR 120: 34

[La. Polytech. Inst., Ruston.] Abstract: Variation in reproduction and in sexual organs was studied for 1461 cotton rats, Sigmodon hispidus, between October 1959 and September 1961 in Payne County, Oklahoma. Seasonal variations in the size of the sex organs were more pronounced in years with cold winters than during years with mild winters. During the cold winter of 1959-60, under crowded conditions, cotton rats did not reproduce. Some reproduction did occur, however, during the mild winter of 1960-61 when the population density was low. Under favorable environmental conditions cotton rats can breed and produce litters at any time during the year. Uterine litter size varied from 1 to 11 per female, averaging 5.9. Uterine litter size was smaller in small or young females and larger in large or old animals. Litters were smaller and less frequent during the cold months of the second year than during the warm months of that same year. The size of testes and ovaries varied seasonally regardless of the size of the individual. In the population, at all times, at least some males and females had enlarged gonads and apparently were capable of reproduction. The reproductive data indicate that cotton rat populations are potentially irruptive throughout the year.

Green, Peter Mathias. DENSITY OF POPULATION AS A REGULATING FACTOR IN THE REPRODUCTIVE POTENTIAL OF SIGMODON HISPIDUS. Ph.D. thesis, Okla. State Univ. 110 p. 1964. [From Dissertation Abstr. 26(3), 1965.] WR 120: 34

Grinbergs, A. [DATA ON THE NUMBER AND RATIO OF THE SPECIES AMONG FOREST-DWELLING MURINE RODENTS IN DIFFERENT GEOBOTANICAL REGIONS OF THE LATVIAN SSR.] In: (Brief results of scientific research on plant protection in the Baltic area of the USSR.) (Riga) 2: 93-95. 1961 (1962). [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 11I275. Transl. of Russian abstr.] WR 120: 34

Gruzdev, V. V. [MAPPING THE SIZES OF MURINE RODENT POPULATIONS ACCORDING TO REPORTS FROM CORRESPONDENTS.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 248-254, maps. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 4I241. Transl. of Russian abstr.] WR 120: 34

Hock, Raymond J. EFFECT OF TRANSLOCATION IN ALTITUDE ON ENDURANCE RUNNING OF DEER MICE. Physiol. Zoöl. 38(4): 353-360, 4 figs. Oct. 1965. WR 120: 34

[White Mountain Res. Sta., Univ. Calif., Bishop.] Deer mice (Peromyscus maniculatus sonoriensis) were translocated to opposite altitudes and tested at intervals for 90 days. Valley mice moved to a high altitude showed an immediate decrease in mean endurance time ($p < .001$), and at the end of the 90-day period, mean endurance time closely approximated that of the mice native to this altitude. Thus hypoxia reduced mean endurance time in these animals. High-altitude mice translocated to a low altitude showed continuous deterioration in performance level, significant at the end of 90 days ($p < .02$). Thus endurance time did not increase after removal of the hypoxic influence. Cardiac anomalies, respiratory upsets, seasonal fluctuations, or some combination of factors may be responsible for this decreased performance.--From summ.

Ismagilov, M. I. [ZONAL FEATURES OF THE RODENT FAUNA OF PLAINS AREAS OF KAZAKHSTAN.] In: (Zoogeography of the land.) (Tashkent). p. 107-108. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 9I247. In Russian.] WR 120: 34

Ivanov, O. A. [THE CHARACTERISTIC TRAITS OF INTERSPECIFIC TERRITORIAL INTERRELATIONS OF THE SMALL SUSLIK.] Trudy Vses. Nauchn.-Issled. Inst. Zashchity Rast. 12: 104-114. 1958. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1960, no. 56I07. Transl. of Russian abstr.] WR 120: 34

Kahmann, Herman. LE LOIR (GLIS GLIS L. 1776) DANS LES MONTS GARGANO, ITALIE (APULIE). [THE DORMOUSE (GLIS GLIS L. 1776) ON MOUNT GARGANO, ITALY (APULIA).] Mammalia (Paris) 29(1): 72-94, 2 pls. Mar. 1965. [From J. Mammal. 46(4), 1965. In French.] WR 120: 35

Kapitonov, V. I. [NEW DATA ON THE BIOLOGY OF ALTICOLA (ASCHIZOMYS) LEMMINUS MILLER.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(6): 14-26, illus. 1963. [From Biol. Abstr. 46(2), 1965. In Russian.] WR 120: 35

Kasatkin, B. M. [EXPERIENCE IN DEALING WITH MANY YEARS' DATA ON THE SIZE OF GREAT GERBIL POPULATIONS.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 205-208, maps. 1963. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 12I211. Transl. of Russian abstr.] WR 120: 35

Kasatkin, B. M., and I. I. Stogov. [METHODS AND ORGANIZATION FOR COUNTING RHOMBOMYS OPIMUS.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 199-204. 1963. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 12I210. Transl. of Russian abstr.] WR 120: 35

Kennerly, Thomas E., Jr. MICROENVIRONMENTAL CONDITIONS OF THE POCKET GOPHER BURROW. Texas J. Sci. 16(4): 395-441. Dec. 1964. [From J. Mammal. 46(4), 1965.] WR 120: 35
[Arlington State Coll., Arlington, Texas.]

Kirkpatrick, Ralph Donald. EVALUATION OF THE LENS WEIGHT AS AN AGING TECHNIQUE FOR THE COTTON RAT, SIGMODON HISPIDUS SAY AND ORD. Ph.D. thesis, Okla. State Univ. 49 p. 1964. [From Dissertation Abstr. 26(3), 1965.] WR 120: 35
All body measurements, with the exception of lens weight, were unsuitable for aging cotton rats beyond the age of approximately 60 days. A lens weight growth curve was determined for captive rats. It was concluded that this curve probably is unlike the lens weight growth curve of wild cotton rats.

Kir'yanov, G. I. [THE BROWN RAT IN ALTAI KRAI.] Doklady Irkutsk Protivochmnogo Inst. 4: 148-152. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 20I260. Transl. of Russian abstr.] WR 120: 35

Klyuchnik, N. S., and A. V. Starostina. [NON-SYNANTHROPIC RODENTS IN LENINGRAD.] Zool. Zhur. 42(10): 1554-1560, map. 1963. [From Biol. Abstr. 46(5), 1965. In Russian with English summ.] WR 120: 35
[Leningrad Port & Mun. Anti-Plague Observ. Sta., Leningrad, USSR.]

Krebs, Charles J., and Karl T. DeLong. A MICROTUS POPULATION WITH SUPPLEMENTAL FOOD. J. Mammal. 46(4): 566-573, 2 figs. 30 Nov. 1965. WR 120: 35
[Indiana Univ., Bloomington.] Abstract: A low density population of the California vole was provided with unlimited food supplementing the natural forage for 11 months. Numbers at first increased very slowly, then rose abruptly to only a moderate density and then declined rapidly in spite of excellent individual growth rates and a sustained high reproductive rate among the adults. Thus supplemental food was not sufficient to produce a rapidly expanding population or to prevent a decline to low numbers.

Kryl'tsov, A. I., and I. G. Shubin. [ECOLOGY OF CRICETULUS EVERSMANNI AND PHODOPUS SUNGORUS.] Zool. Zhur. 43(7): 1062-1070, illus. 1964. [From Biol. Abstr. 46(13), 1965. In Russian with English summ.] WR 120: 35
[Inst. Zool. Acad. Sci. Kaz. SSR, Alma-Ata, Kazan, SSR.]

Kulik, I. L. [EXPERIENCE IN COMPILING SURVEYS OF MURID POPULATION SIZES OVER LARGE AREAS.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 244-247. 1963. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 12I214. Transl. of Russian abstr.] WR 120: 36

Lavrovskii, A. A. [EPIZOOTOLOGICAL ROLE OF MIXED RODENT SETTLEMENTS AT THE JUNCTION OF THE ORIGINAL SHORE AND THE NEW MARITIME PLAIN.] Zool. Zhur. 43(1): 98-107. 1964. [From Biol. Abstr. 46(2), 1965. In Russian with English summ.] WR 120: 36
[All-Union Res. Inst. Microbes, Saratov, USSR.]

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[Austin Coll., Sherman, Texas.] "Peromyscus leucopus and P. gossypinus."

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[Mont. State Coll., Bozeman.] Abstract: Social behavior of Peromyscus maniculatus rufinus and P. polionotus leucocephalus was observed in mixed groups of three mice each to determine the degree of ethological isolation and to observe behavior patterns which might contribute to the isolation noted between the two species. Ten categories of behavior were selected as indicators of ethological isolation, and the amount of interspecific and intraspecific contacts observed are presented. Behavioral patterns of the two species are similar. Mice of each species directed most of the sexual behavior to animals of the same species; however, there was less restriction of some other types of social behavior to mice of the same species. It is estimated the ethological isolation would prevent interbreeding between the two species if they were to become sympatric.

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Sasov, N. P. [WINTER ECOLOGY OF THE WATER RAT IN THE FOREST STEPPE ZONE OF WESTERN SIBERIA.] In: (Problems of zoological studies in Siberia.) Knigoizdat (Gorno-Altaisk). p. 211-213. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 14I293. Transl. of Russian abstr.] WR 120: 38

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[Calif. Acad. Sci., San Francisco.] Abstract: Colonies of mice, Peromyscus leucopus, often began to breed soon after being introduced to previously uninhabited islands in midsummer, although natural populations were not breeding at this season. This breeding began when population densities were higher than those of natural populations and continued until densities far higher than those of natural populations were reached. This unusual breeding may have been caused by the disruption of social structure produced by the colonization.

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[Univ. Fla., Gainesville.] Abstract: Fifty-eight individuals of Neotoma fuscipes were displaced an average of 1127 meters. The average distance moved by the 28 recovered animals from the release site was 885 meters. Approximately half of the recovered animals moved in a direction away from their previous nest sites. No evidence of homing was found. The highest rate of movement recorded was 1600 meters in five nights.

Snigirevskaya, E. M. [PRINCIPLES OF THE TYPOLOGICAL CLASSIFICATION OF RODENT POPULATIONS.] In: (Zoogeography of the land.) (Tashkent). p. 291-292. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 6I311. In Russian.] WR 120: 38

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[Inst. Geogr. Siberia Far East, Siberian Br. Acad. Sci. USSR, Irkutsk, USSR.]

White, Loring. BIOLOGICAL AND ECOLOGICAL CONSIDERATIONS IN MEADOW MOUSE POPULATION MANAGEMENT. Calif. Dept. Agr. Bull. 54(3): 161-171, illus. 1965. WR 120: 39
[Agr. Comm., Modoc County, Calif.] Practical knowledge on life history of Microtus is summarized to help field personnel undertake more effective types of control programs in California.

Yakovlev, M. G. [CALCULATING THE NUMBERS OF WATER RATS.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 209-213. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 4I236. Transl. of Russian abstr.] WR 120: 39

Zaleskii, A. N. [NOTES ON THE FOREST VOLE (CLETHRIONOMYS GLAREOLUS SCHREB.) IN WESTERN KAZAKHSTAN.] Trudy Nauch.-Issled. Inst. Zashch. Rast. Kaz. SSR 7: 573-576. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 4I296. Transl. of Russian abstr.] WR 120: 39

Zejda, Jan. DAS GEWICHT, DAS ALTER UND DIE GESCHLECHTSAKTIVITÄT BEI DER RÖTELMAUS (CLETHRIONOMYS GLAREOLUS SCHREB.). [WEIGHT, AGE AND SEXUAL BEHAVIOR OF THE BANK VOLE (CLETHRIONOMYS GLAREOLUS SCHREB.).] Z. Säugetierk. 30(1): 1-9. Jan. 1965. [From J. Mammal. 46(4), 1965. In German.] WR 120: 39

Zimmerman, Earl G. A COMPARISON OF HABITAT AND FOOD OF TWO SPECIES OF MICROTUS. J. Mammal. 46(4): 605-612. 30 Nov. 1965. WR 120: 39
[Univ. Ill., Urbana.] Abstract: A system of stratified random sampling was employed in the Terre Haute Quadrangle, Vigo County, Indiana, to obtain specimens of Microtus ochrogaster and M. pennsylvanicus for comparing habitat and food habits. M. pennsylvanicus occurred in fields containing at least 50% grasses and abundant cover. M. ochrogaster was found in areas with fewer grasses and less cover. M. pennsylvanicus was found to be closely associated with Poa and Muhlenbergia, while M. ochrogaster was closely associated with Poa, Muhlenbergia, Setaria and Trifolium. Important foods of M. pennsylvanicus were Poa, Panicum and Muhlenbergia comprising, respectively, 32.1, 24.7 and 14.6% of the volume of stomach contents. Important foods for M. ochrogaster were Poa, roots and Trifolium; these contributed 15.8, 10.0 and 9.7% by volume, respectively. M. ochrogaster ate a greater variety of foods than M. pennsylvanicus, probably owing to the greater numbers of species of plants in its habitat. M. ochrogaster ate 4.7% insect material and 0.6% Endogone; M. pennsylvanicus ate 3.6% insect material and 2.1% Endogone. The more abundant plants in the habitat were the most important foods. Ambrosia, Aster and Solidago were avoided.

## RATTUS AND MUS

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Afanas'ev, Yu. G., and E. I. Strautman. [SCIURUS VULGARIS EXALBIDUS IN THE PINE GROVES OF KUSTANAI OBLAST.] Trudy Inst. Zool. Akad. Nauk Kazakhsk. SSR 20: 140-144. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 23I226. Transl. of Russian abstr.] WR 120: 40

Bailey, E. D., and D. E. Davis. THE UTILIZATION OF BODY FAT DURING HIBERNATION IN WOODCHUCKS. Canadian J. Zool. 43(5): 701-707, 1 fig. Sept. 1965. WR 120: 40

[Univ. Guelph, Guelph, Ontario.] Abstract: The woodchuck (Marmota monax) is a true hibernator that does not store food for winter use but subsists entirely on fat reserve stored in the body. The rate at which the stored fat is utilized determines the duration of survival during the months of normal hibernation. Woodchucks were induced to hibernate in a laboratory situation. As they were given no food or water during the hibernation period, the daily loss of weight was an indication of the amount of fat utilized. The hibernation state was found to be about seven times more efficient than the aroused state in conserving energy. An average rate of weight loss for woodchucks for the period from the time of disappearance from above ground in fall to the time of emergence in the spring and to the end of the breeding season is presented.

Bailey, Edward D. SEASONAL CHANGES IN METABOLIC ACTIVITY OF NON-HIBERNATING WOODCHUCKS. Canadian J. Zool. 43(6): 905-909. Nov. 1965. WR 120: 40

[Univ. Guelph, Guelph, Ontario.] Abstract: The metabolic activity of non-hibernating woodchucks (Marmota monax) was measured over a 1-year period. The Haldane method of indirect calorimetry was used to measure $CO_2$ production to provide an index of metabolism. The metabolic rate was seasonally cyclic, reaching a peak in May and decreasing gradually throughout the summer. The lowest monthly values occurred from November through February (the normal time of hibernation for these animals), though the animals were kept from hibernating. The seasonal decrease in metabolism probably creates a physiological predisposition for hibernation and allows fat deposition without a great increase in food intake.

Barkalow, F. S., Jr., and Robert F. Soots, Jr. AN IMPROVED GRAY SQUIRREL NEST BOX FOR ECOLOGICAL AND MANAGEMENT STUDIES. J. Wildl. Mgmt. 29(4): 679-684, 3 figs. Oct. 1965. WR 120: 40

[N. C. State Univ., Raleigh.] Abstract: An improved nest box was developed for use in population and ecological studies of the gray squirrel (Sciurus carolinensis). The box is detachable, can be brought to the ground for examination, and has other advantages: it is easy to check, simple to repair, significantly reduces the time required to capture a squirrel, and makes night examinations practical. Only 84.1 percent of the weaned squirrels in the old-style boxes were captured; whereas, 95.6 percent were recovered from boxes of the new design. The hardware cloth bottom permits the insertion of a stick to dislodge the occupants, allows disintegrating nest material to sift out, and facilitates the drying of wet nesting material. Although the box was designed to permit the greatest facility for the capture and examination of squirrels, it appears to be adaptable for management on a large scale since it is inexpensive to construct and easy to maintain.

Belyk, V. I. [EXPERIENCE IN PREDICTING THE SQUIRREL POPULATION SIZE IN YAKUTIYA.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 24-25. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I218. Transl. of Russian abstr.] WR 120: 40

Bibikov, D. I. [A METHOD FOR DETERMINING MARMOT POPULATION SIZE AND EXPERIENCE IN ITS USE.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 192-198. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 4I235. Transl. of Russian abstr.] WR 120: 40

Bradley, William Glen, Jr. ACTIVITY PATTERNS AND HOME RANGE OF THE ANTELOPE GROUND SQUIRREL, CITELLUS LEUCURUS. Ph.D. thesis, Univ. Ariz. 136 p. 1965. [From Dissertation Abstr. 26(3), 1965.] WR 120: 41

Bree, P. J. H. van, and Ben J. G. Flik. OVER DE RUITIJDEN VAN DE EEKHOORN, SCIURUS VULGARIS L. IN NEDERLAND. [ON MOLTING OF THE EUROPEAN RED SQUIRREL, SCIURUS VULGARIS L. IN HOLLAND.] Natuurhist. Maandblad 53(9): 129-131. 30 Sept. 1964. [From J. Mammal. 46(4), 1965. In Dutch.] WR 120: 41

Fujimaki, Yuzo. [OBSERVATIONS ON THE JAPANESE FLYING SQUIRREL, PTEROMYS VOLANS ORII KURODA, IN CAPTIVITY.] J. Mamm. Soc. Japan 2(2): 42-45. May 1963. [From J. Mammal. 46(4), 1965. In Japanese with English summ.] WR 120: 41

Galkina, L. I. [THE PROBLEM OF THE CONSERVATION OF THE MARMOT IN WESTERN SIBERIA.] Okhrana Prirody Sibiri & Dal'nego Vostoka. Sibirsk. Otd. Akad. Nauk SSSR (Novosibirsk) 1: 170-171. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 2I251. Transl. of Russian abstr.] WR 120: 41

Gashwiler, Jay S. LONGEVITY AND HOME RANGE OF A TOWNSEND CHIPMUNK. J. Mammal. 46(4): 693. 30 Nov. 1965. WR 120: 41

[Oreg. State Univ., Corvallis.] A longevity of at least 7 years for a wild male Eutamias townsendii cooperi. Home range 1.5-1.7 acres.

Jameson, E. W., Jr. FOOD CONSUMPTION OF HIBERNATING AND NONHIBERNATING CITELLUS LATERALIS. J. Mammal. 46(4): 634-640, 1 fig. 30 Nov. 1965. WR 120: 41

[Univ. Calif., Davis.] Abstract: Captive Citellus lateralis were maintained at 4°C and 20°C during the period of natural hibernation. Food intake was determined by recovery and analysis of scats. One gram of fecal material was found to represent 2.7 g of food (oven-dry) (rabbit checkers). Eight squirrels at 4°C hibernated from late October until late April and early May. They ate only when they aroused, about once every 10 to 14 days; during hibernation their mean daily food intake was 0.3 g, and their mean daily caloric intake 1 kcal (65% of which was absorbed), or 2 kcal per metabolic body size. Eight squirrels at 20°C were sluggish but not torpid. They ate daily, the mean daily intake being 8 to 11 g. The mean daily caloric intake per animal at 20°C varied from 16 to 23 kcal, or from 60 to 83 kcal per metabolic body size. An extended warm autumn could retard or prevent hibernation and consequently require this species to draw heavily on its body fat and food stores. It appears that hibernation in this species is a protection against the virtual impossibility of foraging on the ground in deep snow.

Kapitonov, V. I. [HISTORY OF THE RANGE OF MARMOTA CAMTSCHATICA PALLAS.] In: (Zoogeography of the land.) (Tashkent). p. 123-124. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 6I275. In Russian.] WR 120: 41

Karpukhin, I. P. [THE REPRODUCTION OF SQUIRRELS AROUND LAKE BAIKAL.] Sbornik Nauch.-Tekhn. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2(5): 18-20. 1961. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 11I284. Transl. of Russian abstr.] WR 120: 41

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Kiris, I. D. [MIGRATIONS OF THE SQUIRREL IN THE USSR. II.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya & Pushniny 17: 21-69. 1958. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1960, no. 20811. Transl. of Russian abstr.] WR 120: 42

Kiris, I. D. [ABUNDANCE OF THE SQUIRREL AND MEASURES FOR INCREASING ITS POPULATION AND COMMERCIAL EXPLOITATION.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya Pushniny 19: 3-153. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 12I231. Transl. of Russian abstr.] WR 120: 42

Martinson, R. Kahler. FOX AND GRAY SQUIRREL HARVEST, 1961. Game Res. Ohio 2: 49-60, 4 figs. Aug. 1963. WR 120: 42
[19 E. Villard, Dickinson, N. Dak.] Abstract: Squirrel hunter bag check statistics for the 1961 hunting season and the last nine years of the bag check survey are discussed. An attempt is made to analyze these data through the use of two basic indices: viz, total squirrels killed per gun hour and gray squirrels killed per 100 fox squirrels. The bag check technique is discussed and its obvious shortcomings described.

Melchior, Herbert R., and Frank A. Iwen. TRAPPING, RESTRAINING, AND MARKING ARCTIC GROUND SQUIRRELS FOR BEHAVIORAL OBSERVATIONS. J. Wildl. Mgmt. 29(4): 671-678, 4 figs. Oct. 1965. WR 120: 42
[Univ. Wis., Madison.] Abstract: Methods of trapping, restraining, and marking Arctic ground squirrels (Citellus undulatus) in northwestern Alaska are compared and evaluated. Comparison of captures using large and small live traps placed alternately at the intersections of a 30-meter grid system revealed a significant difference between catches of adults and juveniles in large traps and between catches of juveniles in large and small traps. Adults were captured with equal success in both large and small traps as were adults and juveniles in small traps. Observations indicated, however, that juveniles were often too light in weight to trip the mechanism of the larger traps. Based on trap-days per capture, selective site trapping was two to three times as efficient as grid trapping. Trap sites with freshly exposed soil were visited more quickly and more often by ground squirrels than were undisturbed sites. A girth hitch sling fashioned from nylon parachute cord used for restraining the ground squirrels enables one person to handle and mark squirrels with accuracy. A numbering system for toe amputation is described which provides 899 numbers with the limitation of removing no more than one toe per foot. Nyanzol A and D fur dyes were judged the best of several tried. Our color-marking procedure permitted a high degree of accuracy in field identification of animals.

Numerov, K. [DOES THE SABLE AFFECT THE SQUIRREL POPULATION SIZE?] Okhota & Okhotnich'e Khoz. 12: 25-28. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 11I350. In Russian.] WR 120: 42

Pavlinin, V. N. [CONSERVATION OF THE SQUIRREL FROM THE AREA NEAR THE TOBOLSK FORESTS.] Okrana Prirody na Urale (Sverdlovsk) 3: 81-83. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 12I209. Transl. of Russian abstr.] WR 120: 42

Pulliainen, E., and K. Salonen. ON RING-BARKING OF PINE BY THE SQUIRREL (SCIURUS VULGARIS) IN FINLAND. Suomalainen Tiedeakatemia. Ann. Ser. A, IV. Biol. 72. 29 p. 1963. [From Bibliog. Agr. 28(9), 1964.] WR 120: 42

Purohit, K. G., and Pulak Kumar Ghosh. THE ORGAN:BODY WEIGHT RELATIONSHIPS IN THE NORTHERN PALM SQUIRREL, FUNAMBULUS PENNANTI (WROUGHTON). Mammalia (Paris) 29(1): 35-41. Mar. 1965. [From J. Mammal. 46(4), 1965.] WR 120: 42

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Schmidt, H. W. [THE SQUIRREL AS FRIEND AND ENEMY OF FORESTERS.] Allgem. Forstztg. 75(23/24): 280-281. Dec. 1964. [From Bibliog. Agr. 29(4), 1965. In German.] WR 120: 43

Syarzhanin, Yu. I. [TROPHIC RELATIONS, ENEMIES, AND PARASITES OF THE SQUIRREL (SCIURUS VULGARIS FEDJUSHCHINI OGN.) IN BELORUSSIA.] Vyestsi Akad. Navuk BSSR-Syeryya Bialahichnykh Navuk 4: 107-112. 1963. [From Biol. Abstr. 46(9), 1965. In Belorussian with Russian summ.] WR 120: 43

Tyurin, P. S., and M. S. Busalaeva. [COMMERCIAL QUALITIES OF THE PELTS OF SQUIRRELS ACCLIMATIZED IN KIRGIZIYA.] Izv. Akad. Nauk Kirg. SSR-Ser. Biol. Nauk 5(2): 11-15. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I306. Transl. of Russian abstr.] WR 120: 43

BEAVER

Barabash-Nikiforov, I. I., V. V. Dezhkin, and Yu. V. D'yakov. [BEAVERS OF THE DON BASIN. ECOLOGY AND PROBLEMS OF HUSBANDRY MONOGRAPHIC OUTLINE.] Trudy Khopersk Gos. Zapovednika 5: 3-115. 1961. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1963, no. 7I290. Transl. of Russian abstr.] WR 120: 43

Bednarik, Karl E. BEAVER POPULATIONS AND HARVEST, 1960-61. Game Res. Ohio 2: 104-109, 1 fig. Aug. 1963. WR 120: 43
[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: The 1960 statewide beaver inventory in Ohio revealed an estimated 1,130 beavers in 254 colonies in 29 counties. The following trapping season was January 16-21, 1961, in Ashtabula, Mahoning and Columbiana counties; the three-county harvest was 131 beaver, 21 per cent of the estimated preseason population.

Knudsen, George J., and James B. Hale. MOVEMENTS OF TRANSPLANTED BEAVERS IN WISCONSIN. J. Wildl. Mgmt. 29(4): 685-688. Oct. 1965. WR 120: 43
[Wis. Conserv. Dept., Madison.] Abstract: From 1951 to 1957, 2,200 beavers (Castor canadensis) were livetrapped in north and central Wisconsin, ear-tagged, and moved to new release sites. Recaptures totaled 472. Mean movement distances of recaptured beavers transplanted to streams were more than twice as long as for beavers transplanted to potholes and lakes. This relationship held true for both sexes. Landlocked waters are recommended as the best release sites for transplants.

Zharkov, I. V. [MODERN METHODS OF COUNTING BEAVERS.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 176-186. 1963. [From Biol. Abstr. 46(8), 1965, from Referat. Zhur., Biol., 1964, no. 9I149. Transl. of Russian abstr.] WR 120: 43

MUSKRAT AND NUTRIA

Abashkin, S. A. [THE TECHNIQUE OF TRAPPING MUSKRATS IN WINTER.] Sbornik Nauch.-Tekh. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2(5): 34-36. 1961. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I310. Transl. of Russian abstr.] WR 120: 43

Bednarik, Karl E. NUTRIA IN OHIO, 1960. Game Res. Ohio 2: 109-112, 2 figs. Aug. 1963. WR 120: 43
[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: The 1960 Ohio nutria survey revealed 72 commercial propagators rearing nutria--an increase of almost 100 per cent over 1958. Twelve feral nutria were reported recovered in seven Ohio counties.

Davydov, M. M. [FEATURES OF THE ECOLOGY AND HUNTING OF MUSKRATS IN YAKUTIYA.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 67-69. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I296. Transl. of Russian abstr.] WR 120: 44

Korsh, P. V. [THE EFFECT OF EPIZOOTICS ON ACCLIMATIZATION OF MUSKRATS IN WESTERN SIBERIA.] In: (Data from the 1963 summary conference on disease with natural foci.) (Tyumen'). p. 174-179. 1963. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I314. In Russian.] WR 120: 44

Krasovskii, L. I. [MATERIAL ON THE METHODOLOGY OF FOOD BASE EVALUATION OF MUSKRAT LODGES ON FLOATING MATS ALONG SHORES OF BARABA LAKES.] Sbornik Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya Pushniny 4(7): 31-37. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 12I198. Transl. of Russian abstr.] WR 120: 44

Mehl, S. [THE PRACTICAL IMPORTANCE OF BAITED TRAPS FOR THE MUSKRAT (ONDATRA ZIBETHICA LINNAEUS, 1766) AS A SIMPLER AND MORE ECONOMICAL WAY OF REMOVING THIS PEST FROM RUNNING WATERS.] Gesundheitsw. & Desinfekt. 55(11): 147-155. Nov. 1963. [From Bibliog. Agr. 28(9), 1964. In German.] WR 120: 44

Mel'nikov, V. K. [THE MUSKRAT OF TUNKINSK RAION OF THE BURYAT ASSR AND ITS USE.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 162-164. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 16I315. Transl. of Russian abstr.] WR 120: 44

Mukhamedkulov, M. M. [THE BIOLOGY OF FREE-LIVING NUTRIAS AROUND LAKES AND RESERVOIRS IN TASHKENT OBLAST.] In: (Commercial game animals of Uzbekistan.) Akad. Nauk Uzbek SSR (Tashkent). p. 36-42. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1963, no. 23I236. Transl. of Russian abstr.] WR 120: 44

Oleinikov, N. S., and I. N. Vasil'eva. CONTROLLING COARSE VEGETATION IN RESERVOIRS WITH NUTRIA.] Izv. Akad. Nauk Turk. SSR-Ser. Biol. Nauk 5: 74-76. 1963. [From Biol. Abstr. 46(9), 1965. In Russian.] WR 120: 44

Pashkevich, V. Yu. [FEATURES OF THE HABITATION BY MUSKRATS OF THE OB' RIVER FLOODPLAIN.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 191-192. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I297. Transl. of Russian abstr.] WR 120: 44

Petrov, V. I. [THE STATUS AND PROSPECTS FOR RAISING MUSKRATS IN THE TURUKHANSK RAION OF KRASNOYARSK KRAI.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 194-197. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 16I316. Transl. of Russian abstr.] WR 120: 44

Razumovskii, B. I. [CHANGES IN THE REED THICKETS OF UNUSED LANDS OF WESTERN SIBERIA AND THEIR EFFECT ON MUSKRAT RAISING.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 208. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I319. Transl. of Russian abstr.] WR 120: 44

Reimov, R. [ON THE PROBLEM OF PROPAGATION OF ONDATRA ZIBETHICA IN THE AMU-DARYA DELTA.] Vest. Karakalpaksk Fil. Akad. Nauk Uzbeksk SSR 2(8): 23-28. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 12I225. Transl. of Russian abstr. Original with Uzbek summ.] WR 120: 44

Salganskaya, L. A. [A STUDY OF THE BLOOD PICTURE AS ONE OF THE SUPPLEMENTARY METHODS FOR ECOLOGICAL INVESTIGATIONS.] Voprosy Ekologii. Kiev. Univ. (Kiev) 4: 142-143. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 4I201. Transl. of Russian abstr.] WR 120: 45

The blood of muskrats living under natural conditions was investigated in 1958. There are 7,000 leukocytes per $mm^3$. The time of year, character of the diet and condition of the animal affect the blood picture; seasonal changes are reflected primarily in the red cells; the method of capture and the traumatization connected with it affect the white cells.

Streit, O. [ABOUT THE MUSKRAT.] Allgem. Forstz. 19(48): 744. 28 Nov. 1964. [From Bibliog. Agr. 29(4), 1965. In German.] WR 120: 45

"Forest pest."

Syroechkovskii, E. E. [VARIATIONS OF THE GEOGRAPHICAL FEATURES OF THE TEREK-SULAK LOWLAND RESERVOIRS AS A FACTOR INFLUENCING THE DISTRIBUTION AND NUMBER OF MUSKRAT.] Zool. Zhur. 37(8): 1244-1251. 1958. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1959, no. 30594. Transl. of Russian abstr. Original with English summ.] WR 120: 45

Tarasov, M. P. [THE MUSKRAT AND THE MUSKRAT-HUNTING INDUSTRY IN THE NORTHERN PART OF IRKUTSK OBLAST.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 235-237. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I317. Transl. of Russian abstr.] WR 120: 45

Voilochnikov, A. T. [TRAPPING MUSKRATS IN WATERS OF THE MIDDLE AMUR LOWLAND.] Sbornik Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnykh Syr'ya Pushniny 4(7): 24-28. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 16I318. Transl. of Russian abstr.] WR 120: 45

Zalutskii, N. [ARTIFICIAL NESTS FOR THE MUSKRAT.] Okhota & Okhotnich'e Khoz. 11: 16. 1962. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 16I320. Transl. of Russian abstr.] WR 120: 45

Artificial nests for muskrats were constructed in Buryatiya during the spring floods. From 90 to 95% were inhabited; the number of animals doubled and hunting them was facilitated.

## FUR ANIMALS, GENERAL

Bednarik, Karl H. FUR HARVEST, 1959-60. Game Res. Ohio 2: 97-101, 1 fig. Aug. 1963. WR 120: 45

[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: The 1959-60 Ohio fur harvest report compiled from Ohio fur dealers' reports to the Department of Natural Resources, indicated that the total net value of Ohio furs showed an increase of $289,637.68 (54 per cent) from the trapping season of 1958-59, although the total harvest declined 17 per cent, from 816,986 to 674,029.

Korytin, S. A. [METHODOLOGICAL BASIS FOR DEVELOPMENT OF FRAGRANT BAIT FOR FUR-BEARING ANIMALS.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnoi Syr'ya Pushniny 19: 247-258. 1962. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 8I229. Transl. of Russian abstr.] WR 120: 45

Martinson, R. Kahler. FUR HARVEST, 1960-61. Game Res. Ohio 2: 101-104, 1 fig. Aug. 1963. WR 120: 45

[19 E. Villard, Dickinson, N. Dak.] Abstract: Ohio fur buyers' reports indicate that fur harvests during the last 10 years have fluctuated from year to year but no general trends, either upward or down, were apparent. Pelt price and total harvest showed little relationship among data concerning muskrats, minks and raccoons. Over-all changes from 1959-60 to 1960-61 were: total pelts, from 674,029 to 690,080; total value from $828,026.35 to $747,045.38; average pelt price from $1.23 to $1.08; number of fur dealers from 371 to 426.

Numerov, K. D., and P. N. Pavlov. [THE FUR RESOURCES OF KRASNOYARSK KRAI IN THE PAST AND AT PRESENT.] Izvest. Krasnoyarsk Otd. Geog. Obshch. SSSR 2: 139-153. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 16I304. Transl. of Russian abstr.] WR 120: 46

Reimov, R., and R. Zhollybekov. [FUR-BEARING ANIMALS OF THE LOWER REACHES OF AMU-DAR'YA RIVER AND THEIR USE.] Vestnik Karakalpakskogo Filiala Akad. Nauk Uz. SSR 2(12): 92-98. 1963. [From Biol. Abstr. 46(8), 1965, from Referat. Zhur., Biol., 1964, no. 9I308. Transl. of Russian abstr.] WR 120: 46

Romanov, A. [NEW METHODS FOR CATCHING FUR-BEARING ANIMALS.] Okhota & Okhotnich'e Khoz. 10: 13-15. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 12I220. Transl. of Russian abstr.] WR 120: 46

Shimalov, V. T. [SKRJABINGYLOSIS IN FUR-BEARING MAMMALS OF THE FAMILY MUSTELIDAE IN BELORUSSIA.] Vyestsi Akad. Navuk BSSR-Syeryya Biyalahichnykh Navuk 4: 132-133. 1963. [From Biol. Abstr. 46(12), 1965. In Russian.] WR 120: 46

Thirty five percent of wild Mustelidae investigated in Belorussia were infected with nematodes of the genus Skrjabingylus.

BEARS

Erickson, Albert W. THE BLACK BEAR IN ALASKA / ITS ECOLOGY AND MANAGEMENT. Alaska Dept. Fish & Game. 19 p. Mar. 1965. WR 120: 46

Description; distribution and abundance; population dynamics; food, predatory habits and cannibalism; parasites, diseases and pathological conditions; behavior; hibernation; physiological conditions; and management of Ursus americanus. With a bibliography of 84 titles.

Erickson, Albert W. THE BROWN-GRIZZLY BEAR IN ALASKA / ITS ECOLOGY AND MANAGEMENT. Alaska Dept. Fish & Game. 42 p. Aug. 1965. WR 120: 46

Description; distribution and habitat requirements; abundance, population dynamics; food, predatory habits and cannibalism; bear attacks; parasites, diseases and pathological conditions; behavior; harvest data; size of the kill; the chronology of the kill; hunter residence; sex composition of the kill; size composition of the kill; and management of Ursus arctos. With a bibliography of 113 titles.

Karmysheva, N. Kh. [PLANT FOOD OF THE "WHITE-CLAWED BEAR" IN THE AKSU-DZHABAGLINSK PRESERVE.] Trudy Inst. Zool. Akad. Nauk Kazakhsk. SSR 20: 131-139. 1963. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 24I238. Transl. of Russian abstr.] WR 120: 46

Parovshchikov, V. Ya. [BREEDING OF THE POLAR BEAR (URSUS MARITIMUS) ON THE FRANZ JOSEF ARCHIPELAGO.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(1): 127-129. 1964. [From Biol. Abstr. 46(4), 1965. In Russian.] WR 120: 46

On islands in the Franz Josef Archipelago the mating season of polar bears began in the last of April and continued until the 1st half of July. Cubs were born from Jan.-Mar. of the next year. Dens where gestating she-bears hibernate are described. Of the 134 she-bears observed, 30 had one cub each and 104, two. The dates when cubs left the den and the trapping of 11 cubs in 1960 showed that she-bears did not all give birth at the same time and they brought the cubs out of the dens over a period of 50 days, on the average. Cubs stayed with their mothers for 2 years and then began to live independently although they did not reach sexual maturity until their 3rd-4th year.

White, Thomas. THE POSSIBILITY OF GRIZZLY BEARS STILL EXISTING IN SASKATCHEWAN. Blue Jay 23(3): 138-140, 2 figs. Sept. 1965. WR 120: 46

## RACCOON, RINGTAIL, COATI

Herman, Carlton M., and Donald L. Price. EPIZOOTIOLOGIC STUDIES ON FILARIOIDS OF THE RACCOON. J. Wildl. Mgmt. 29(4): 694-699, 2 figs. Oct. 1965. WR 120: 47 [Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: Filarioid worms (Dirofilaria immitis, D. tenuis, Dipetalonema procyonis, and D. llewellyni) were discovered in raccoons (Procyon lotor) in Maryland. Raccoons were trapped in lowland, upland, and agricultural-residential areas, which were further classified as stream borders, poorly drained, and well drained. Data on incidence of D. llewellyni were analyzed on basis of host distribution within these areas to indicate type of habitat in which one might seek the vector. It was concluded that exposure takes place in the spring of the year. The arthropod found associated most often with the raccoon in spring was Ixodes texanus. Larvae of this tick which were fed on infected raccoons presented no evidence of development of the microfilariae. Feeding experiments were also conducted with mosquitoes: Aedes aegypti, A. canadensis, A. sollicitans, A. triseriatus, A. vexans, Culex pipiens, Anopheles punctipennis, and A. quadrimaculatus. Although microfilariae remained alive and active in the gut contents of all these mosquitoes for 2 days, only in Aedes aegypti did they enter the hemocele, but no developmental changes were noted and all microfilariae were dead by the eighth day. - Although the intermediate host of D. llewellyni was not determined, evaluation of the accumulated data provides criteria for seeking the vector. It appeared unlikely that exposure of the raccoons took place in the den or that the filarioids were transmitted by an ectoparasite commonly found in raccoon dens. The data suggest that the vector is available only early in spring, although there are infected raccoons throughout the year. Prevalence in juveniles was 21 percent; in subadults, 64 percent; in adults, 87 percent.

## MUSTELIDS

Aulerich, R. J., L. Holcomb, R. K. Ringer, and P. J. Schaible. INFLUENCE OF PHOTOPERIOD ON REPRODUCTION IN MINK. Mich. Agr. Expt. Sta. Quart. Bull. 46 (1): 132-138. Aug. 1963. [From Bibliog. Agr. 28(6), 1964.] WR 120: 47

Bakeev, N. N. [COUNTING PINE MARTENS BY SHOOTING SOME OF THEM ON SAMPLE AREAS. PRELIMINARY COMMUNICATION.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 159-163. 1963. [From Biol. Abstr. 46(8), 1965, from Referat. Zhur., Biol., 1964, no. 9I147. Transl. of Russian abstr.] WR 120: 47

Beishebaev, K. [NOTES ON THE POPULATION OF NORTH AMERICAN MINK (LUTREOLA VISON) IN THE NUT AND FRUIT FORESTS OF SOUTHERN KIRGHIZIYA.] Izv. Akad. Nauk Kirg. SSR-Ser. Biol. Nauk 5(2): 5-10. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I305. Transl. of Russian abstr.] WR 120: 47

Belyk, V. I. [DATA ON THE WINTER DIET OF THE YAKUTSK ERMINE.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnykh Syr'ya Pushniny 19: 221-229. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 6I272. Transl. of Russian abstr.] WR 120: 47

Dean, Frederick C. WINTER AND SPRING HABITS AND DENSITY OF MAINE SKUNKS. J. Mammal. 46(4): 673-675. 30 Nov. 1965. WR 120: 47 [Univ. Alaska, College.]

Dul'keit, G. [THE CEMBRA NUT IN THE DIET OF SABLES.] Trudy Tomsk. Obl. Kraevedchesk Muz. 6(1): 68-75. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 13I228. Transl. of Russian abstr.] WR 120: 47

Egorov, Yu. B. [THE EFFECT OF MAN'S ACTIVITIES ON THE CHANGE IN DISTRIBUTION OF MINK.] In: (The zoogeography of the land.) (Tashkent). p. 91-92. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 9I261. In Russian.] WR 120: 47

Ernst, Carl H. RUTTING ACTIVITIES IN A CAPTIVE STRIPED SKUNK. J. Mammal. 46(4): 702-703. 30 Nov. 1965. WR 120: 48
[Univ. Ky., Lexington.]

Grakov, N. N. [THE ROLE OF SQUIRRELS IN THE DIET OF MARTENS IN THE EUROPEAN NORTH.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnykh Syr'ya Pushniny 19: 154-163. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 15I287. Transl. of Russian abstr.] WR 120: 48

Hartman, L. THE BEHAVIOUR AND BREEDING OF CAPTIVE WEASELS (MUSTELA NIVALIS L.). New Zealand J. Sci. 7(2): 147-156, illus. June 1964. [From J. Mammal. 46(4), 1965.] WR 120: 48

King, R. J. THE BADGER GATE. Quart. J. Forest. 58(4): 311-319, illus. 1964. [From Biol. Abstr. 46(14), 1965.] WR 120: 48
By providing badger gates in fences, rabbits can be kept out and badgers allowed free passage in and out of a fenced plantation. Gates are described in detail. It is desirable to provide access for badgers because they kill mice, voles, young rabbits, and insects, and because they tear up fences if gates are not provided.

Kiselev, V. A. [THE SABLE IN THE YENISEI AREA OF THE NORTHERN USSR AND THE EFFICIENT USE OF ITS STOCKS.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 117-119. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I308. Transl. of Russian abstr.] WR 120: 48

Korchmar', N. D. [SOME DATA ON THE DISTRIBUTION, BIOLOGY AND ECONOMIC VALUE OF BADGERS IN MOLDAVIA.] In: (Problems of ecology and practical significance of birds and mammals in Moldavia.) "Shtiintsa" (Kishinev). p. 56-63. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I293. Transl. of Russian abstr.] WR 120: 48

Mel'chinov, M. S. [EXPERIENCE IN FEEDING ARTIFICALLY RESETTLED SABLES.] Nauchn. Soobshch. Yakutsk. Fil. Sibirsk. Otd. Akad. Nauk SSSR 8: 93-96. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 16I313. Transl. of Russian abstr.] WR 120: 48

Monakhov, G. I. [MIGRATION OF SABLES IN EASTERN SIBERIA IN THE FALL AND WINTER OF 1961-1962.] In: (Problems of zoological research in Siberia.) Knigoizdat (Gorno-Altaisk). p. 167-169. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I290. Transl. of Russian abstr.] WR 120: 48

Nadeev, V. N. [THE INTERRELATIONSHIP BETWEEN INDIVIDUAL SABLES AND ITS PLACE IN THE BIOCENOSIS.] In: (Problems of intraspecies relationships in organisms.) Tomsk. Univ. (Tomsk). p. 69-71. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I291. Transl. of Russian abstr.] WR 120: 48

Numerov, K. D. [ANNUAL CHANGES IN THE COLOR OF RUSSIAN SABLE OF YENESEI SIBERIA.] Zool. Zhur. 43(4): 599-605. 1964. [From Biol. Abstr. 46(3), 1965. In Russian with English summ.] WR 120: 48

Numerov, K. D., and P. N. Pavlov. [PAST AND PRESENT SABLE POPULATION IN ENISEISKOI SIBERIA.] In: (Problems of zoological research in Siberia.) Knigoizdat (Gorno-Altaisk). p. 176-178. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I288. Transl. of Russian abstr.] WR 120: 48

Pavlinin, V. N. [NOTES ON THE VARIABILITY OF LUTREOLA VISON IN THE URALS.] Trudy Inst. Biol. Ural'sk Fil. Akad. Nauk SSSR 29: 97-119. 1962. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 23I197. Transl. of Russian abstr.] WR 120: 49

Polyakov, E. F. [THE PROBLEM OF TERRITORIAL ANTAGONISM IN SABLES.] In: (Problems of intraspecies relationships of organisms.) Tomsk. Univ. (Tomsk). p. 172-173. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I292. Transl. of Russian abstr.] WR 120: 49

Rust, Charles C., Richard M. Shackelford, and Roland K. Meyer. HORMONAL CONTROL OF PELAGE CYCLES IN THE MINK. J. Mammal. 46(4): 549-565, 4 pls. 30 Nov. 1965. WR 120: 49
[Univ. Wis. Center, Janesville.]

Sinha, Akhouri Achyutanand. MORPHOLOGY OF THE FEMALE REPRODUCTIVE ORGANS OF SEA OTTERS (ENHYDRA LUTRIS L.). Ph.D. thesis, Univ. Mo. 213 p. 1965. [From Dissertation Abstr. 26(3), 1965.] WR 120: 49

Tarrajat, A. LA BELETTE (MUSTELA NIVALIS). [THE WEASEL (MUSTELA NIVALIS).] Bull. Mens. Soc. Linn. Lyon 32(5): 134-135. 1963. [From Biol. Abstr. 46(2), 1965. In French.] WR 120: 49

Ternovskii, D. V. [METHODS OF STUDYING THE NUTRITION OF MUSTELIDS.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 243-244. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I231. Transl. of Russian abstr.] WR 120: 49

Timofeev, V. V. [PRELIMINARY DATA ON THE REPRODUCTION RATE OF THE SABLES OF EASTERN SIBERIA.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 244-246. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I309. Transl. of Russian abstr.] WR 120: 49

Timofeev, V. V. [THE BASES FOR MAKING CENSUSES AND PLANNING THE CATCH OF SABLE ON GAME LANDS OF EASTERN SIBERIA.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 154-158. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I146. Transl. of Russian abstr.] WR 120: 49

Vaseneva, A. Ya. [THE ECONOMIC EXPEDIENCE OF ACCLIMATIZING MINK IN THE FAR EAST.] Sbornik Nauch.-Tekh. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 6(9): 60-62. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I304. Transl. of Russian abstr.] WR 120: 49

Vershinin, A. A. [THE FUNDAMENTALS OF PLANNING HUNTING OF THE KAMCHATKA SABLE.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 34-35. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 16I311. Transl. of Russian abstr.] WR 120: 49

Vershinin, A. A. [THE REACCLIMATIZATION OF THE KAMCHATKA SABLE IN THE FORESTS OF THE PENZHINA BASIN.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya Pushniny 19: 206-220. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 16I312. Transl. of Russian abstr.] WR 120: 49

Voronov, V. G., and G. A. Voronov. [NEW DATA ON THE DISTRIBUTION OF THE SABLE IN SAKHALIN OBLAST.] Trudy Sakhalinsk Kompleksnogo Nauchn.-Issled. Inst. 14: 48-53. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 23I208. Transl. of Russian abstr.] WR 120: 49



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Zhdanov, A. [THE SABLE IN THE NORTHERN PART OF NOVOSIBIRSK OBLAST.] Sel'skokhoz. Proizv. Sibiri Dal'nego Vost. 11: 76. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 11I319. Transl. of Russian abstr.] WR 120: 50

## DOGS, WOLVES, FOXES

Aliev, F. F. [AN ANALYSIS OF THE ACCLIMATIZATION OF NYCTEREUTES PROCYONIDES GRAY IN THE AZERBAIDZHAN SSR.] Izvest. Akad. Nauk Azerbaidzhansk. SSR Ser. Biol. Med. Nauk 1: 53-57, maps. 1962. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 2I256. Transl. of Russian abstr. Original with Azerbaidzhani summ.] WR 120: 50

Englund, Jan. THE DIET OF FOXES (VULPES VULPES) ON THE ISLAND OF GOTLAND SINCE MYXOMATOSIS. Viltrevy 3(6): 507-530, 1 fig. 1965. In English with Swedish summ. WR 120: 50

[Univ. Stockholm, Stockholm, Sweden.] After myxomatosis foxes ate more hares, small rodents and perhaps even sheep than they had done previously. Poultry consumption declined while that of game birds increased. Although the proportion of rabbits taken decreased from 37% to 18%, foxes in proportion to the decreased population ate rabbits 10 times as often after myxomatosis as they had done before.

Englund, Jan. STUDIES ON FOOD ECOLOGY OF THE RED FOX (VULPES V.) IN SWEDEN. Viltrevy 3(4): 377-485, 7 figs. 1965. In English with Swedish summ. WR 120: 50

[Univ. Stockholm, Stockholm, Sweden.]

Fairley, J. S. THE FOOD OF THE FOX, VULPES VULPES (L.), IN CO. DOWN. Irish Nat. J. 15(1): 2-5. 1965. [From Biol. Abstr. 46(14), 1965.] WR 120: 50

[Queen's Univ., Belfast, Northern Ireland.]

Ishunin, G. I. [FEEDING HABITS OF FOXES IN UZBEKISTAN.] Zool. Zhur. 42(10): 1567-1573. 1963. [From Biol. Abstr. 46(5), 1965. In Russian with English summ.] WR 120: 50

[Inst. Parasitol. & Zool., Acad. Sci. Uzbek SSR, Tashkent, Uzbek SSR.]

Khudoleev, F. I. [INCREASING THE PRODUCTIVITY OF FOX-HUNTING ON THE GYDA PENINSULA.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 254-256. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I306. Transl. of Russian abstr.] WR 120: 50

Khudoleev, F. I. [FEEDING OF THE ARCTIC FOX (ALOPEX LAGOPUS) ON THE GYDA PENINSULA.] Trudy Vses. Sel'skokhoz. Inst. Zaochnogo Obrazovaniya 15: 181-183. 1963. [From Biol. Abstr. 46(5), 1963, from Referat. Zhur., Biol., 1964, no. 3I1282. Transl. of Russian abstr.] WR 120: 50

Lapin', I. [IS THE RACCOON DOG NEEDED IN LATVIA?] Okhota & Okhotnich'e Khoz. 11: 27-28. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 11I318. Transl. of Russian abstr.] WR 120: 50

In 1948 about 100 raccoon dogs were released in the northeastern part of Latvia; at present there are about 10,000. The result has been a displacement of badgers from their burrows (from 1940 to 1958 about 50% of the burrows were constantly occupied by badgers; in 1961-1962, only about 20%). They are also exterminating useful birds and animals which formed 61.9% of the contents of 60 stomachs (murine rodents were only 4.8%). The size of the raccoon dog populations must be regulated.

Makridin, V. P. [THE ARCTIC WOLF AND PROSPECTS FOR EXTERMINATING IT.] In: (Problems of zoological investigation in Siberia.) Knigoizdat (Gorno-Altaisk). p. 157-159. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 16I334. Transl. of Russian abstr.] WR 120: 51

Pavlov, M. P. [THE QUESTION OF YEAR-ROUND SHOOTING OF FOXES AND RACCOON DOGS AND ITS CRITICAL ANALYSIS BY THE JOURNAL "SPORT AND COMMERCIAL HUNTING."] Sbornik Nauch.-Tekhn. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2(5): 22-26. 1961. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 11I345. In Russian.] WR 120: 51

Reynolds, I. M., and R. E. Smith. LISTERIOSIS OF GRAY FOXES IN MASSACHUSETTS A CASE REPORT. Health Lab. Sci. 2(4): 250-253. Oct. 1965. WR 120: 51
[Mass. Agr. Expt. Sta., Amherst.] Confirmation that listeriosis occurs naturally in feral foxes is provided by this report, the second from the Atlantic coastal states.

Skrobov, V. D. [COUNTING THE NUMBER OF POLAR FOXES ON THE YAMAL PENINSULA AS PART OF AN ESTIMATION OF THE FUR RESOURCES OF THE AREA.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 168-175. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I148. Transl. of Russian abstr.] WR 120: 51

Smirnov, V. S. [VARIATIONS IN THE POPULATION SIZE OF THE POLAR FOX ON THE YAMAL PENINSULA FOR THE YEARS 1955 THROUGH 1961.] In: (Problems on zoological studies in Siberia.) Knigoizdat (Gorno-Altaisk). p. 215-216. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 13I233. Transl. of Russian abstr.] WR 120: 51

Yakushkin, G. D. [SOME DATA ON AUTUMN MIGRATIONS OF THE ARCTIC FOX (ALOPEX LAGOPUS) ON THE TAIMYR PENINSULA.] Trudy Vses. Sel'skokhoz. Inst. Zaochnogo Obrazovaniya 15: 172-180. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 3I281. Transl. of Russian abstr.] WR 120: 51

CATS

Allayarov, A. M. [DATA ON THE ECOLOGY AND GEOGRAPHICAL DISTRIBUTION OF FELIS (CHAUS) CHAUS IN UZBEKISTAN.] Uzbekskii Biol. Zhur. 8(2): 46-50. 1964. [From Biol. Abstr. 46(4), 1965. In Russian.] WR 120: 51
This predator lives exclusively in forest thickets on plains (turgais) and is widely distributed in Uzbekistan, where it is found in the valleys of the Syr-Darya and Chirchik Rivers, as well as the Begovatsk region. There are many of these predators in the Surkhan and Amu-Darya river basins. In the Shirabad region it is found along ravines of the Karasu River, in the Shirabad river valley, and along the shores of Kale Kul'Maigyr. Felis (Chaus) chaus feeds on mammals and birds, including such animals as Nutria coypu, Lepus tolai, Allactaga elater, Mus musculus, Rhombomys opimus, larks, and ducks. This predator is a serious threat in hunting areas.

Hornocker, Maurice G., John J. Craighead, and E. W. Pfeiffer. IMMOBILIZING MOUNTAIN LIONS WITH SUCCINYLCHOLINE CHLORIDE AND PENTOBARBITAL SODIUM. J. Wildl. Mgmt. 29(4): 880-883. Oct. 1965. WR 120: 51
[Univ. British Columbia, Vancouver.] Abstract: Succinylcholine chloride was administered intramuscularly to 13 mountain lions (Felis concolor) captured by the use of dogs in western Montana. The average for 19 different dosages was 1 mg of drug for 17.4 pounds of body weight. The average dosage for 12 adult lions in the wild (excluding four juveniles and three dosages to two lions brought in from the field and held in captivity) was 1 mg for 13.1 pounds of body weight. Two lions anesthetized with pentobarbital sodium, after initial immobilization with succinylcholine chloride, received an average dosage of 10.9 mg per pound body weight. Succinylcholine chloride is highly effective for immobilizing lions but should not be administered to treed animals that may be subjected to injurious or fatal falls.

Aleksandrov, V. N. [THE METHOD OF COUNTING DEER IN THE CAUCASUS PRESERVE.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 113-117. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 5I235. Transl. of Russian abstr.] WR 120: 52

Batchelor, Ronald F. THE ROOSEVELT ELK IN ALASKA / ITS ECOLOGY AND MANAGEMENT. Alaska Dept. Fish & Game. 37 p., 5 figs. July 1965. WR 120: 52
In an attempt to establish the Roosevelt elk in Alaska, five female and three male yearlings were introduced to Afognak Island of the Kodiak Archipelago in 1929. Finding the Afognak environment favorable, these eight animals increased to a population of approximately 1,200 animals within 35 years and now occupy nearly all of the Island. Elk on Afognak Island were first legally hunted in 1950. Permit hunts were again held in 1952 and 1953. Since 1955, general seasons of varying length have been held each fall with the first either-sex season conducted in 1959. Since that time animals of either sex have been hunted, and the harvest increased from 27 animals in 1950 to a high of 127 in 1960.--From summ.

Boisson, L. P. [SPECIAL ANIMALS: THE DEER.] France. Min. de l'Agr. B. Tech. d'Inform. 188: 259-263. Mar./Apr. 1964. [From Bibliog. Agr. 29(8), 1965. In French.] WR 120: 52

Briedermann, L., and A. Neumann. [A SURVEY OF LOSSES OF BROWSING GAME AND WILD BOARS WITHIN THE PROVINCE OF COTTBUS DURING THE WINTER OF 1962/63.] Arch. f. Forstw. 13(7): 733-745. 1964. [From Bibliog. Agr. 29(2), 1965. In German with English summ.] WR 120: 52

Bubenik, A. B. BEITRAG ZUR GEBURTSKUNDE UND DEN MUTTER-KIND-BEZIEHUNGEN DES REH- (CAPREOLUS CAPREOLUS L.) UND ROTWILDES (CERVUS ELAPHUS L.). [CONTRIBUTION TO THE KNOWLEDGE OF BIRTH AND ADULT FEMALE-JUVENILE RELATIONSHIP OF THE ROE DEER (CAPREOLUS CAPREOLUS) AND RED DEER (CERVUS ELAPHUS).] Z. Säugetierk. 30(2): 65-128. Mar. 1965. [From J. Mammal. 46(4), 1965. In German.] WR 120: 52

Caughley, Graeme. HORN RINGS AND TOOTH ERUPTION AS CRITERIA OF AGE IN THE HIMALAYAN THAR, HEMITRAGUS JEMLAHICUS. New Zealand J. Sci. 8(3): 333-351, 7 figs. Sept. 1965. WR 120: 52
[Forest Res. Inst., Rotorua, New Zealand.] It is suggested that the lower variabilities of tooth eruptions reported for other ungulates may be underestimates resulting from the use of sample ranges instead of standard deviations.--From summ.

Chen, E. C. H., D. A. Blood, and B. E. Baker. ROCKY MOUNTAIN BIGHORN SHEEP (OVIS CANADENSIS CANADENSIS) MILK. I. GROSS COMPOSITION AND FAT CONSTITUTION. Canadian J. Zool. 43(5): 885-888. Sept. 1965. WR 120: 52
[McGill Univ., Montreal, Quebec.] Abstract: Milk was obtained from five Rocky Mountain bighorn sheep living in the Jasper Park area of Alberta. The milk was collected at 1.5 and 3 months post partum. The gross composition and milk fat fatty acids of the milk samples and of a sample of domestic sheep milk (Suffolk, 1 month post partum) were determined.

Christie, A. H. C., and J. R. H. Andrews. INTRODUCED UNGULATES IN NEW ZEALAND. (A) HIMALAYAN TAHR (HEMITRAGUS JEMLAHICUS, BOVIDAE). Tuatara 12 (2): 69-77, illus., map. 1964. [From Biol. Abstr. 46(8), 1965.] WR 120: 52
[New Zealand Forest Serv., Wellington, New Zealand.]

Dasmann, Raymond F., and William P. Dasmann. BIG GAME AND GAME HABITAT IN RELATION TO A CLIMATIC GRADIENT IN THE WESTERN UNITED STATES. Pacific Sci. Congr. Abstr. Symp. Pap. 10: 250. 1961. [From Biol. Abstr. 46(14), 1965.] WR 120: 52
[Museum Vertebrate Zool., Univ. Calif., Berkeley.]

Egorov, O. V. [PROSPECTS FOR THE ACCLIMATIZATION OF UNGULATES IN YAKUTIYA.] In: (Problems of conservation in Yakutiya.) (Yakutsk). p. 99-106. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I301. Transl. of Russian abstr.] WR 120: 53

Erdbrink, D. P. COMPARAISON DE RAMURES RÉCENTES ET FOSSILES DU CERF ÉLAPHE. [A COMPARISON OF ANTLERS FROM RECENT AND FOSSIL RED DEER.] Mammalia (Paris) 28(4): 628-650. Dec. 1964. [From J. Mammal. 46(4), 1965. In French.] WR 120: 53

Fil', V. I. [POPULATION OF THE SIBERIAN GOAT (CAPRA SIBIRICA) IN TOFALARIYA (EASTERN SAYAN).] Zool. Zhur. 43(4): 621-622. 1964. [From Biol. Abstr. 46 (3), 1965. In Russian with English summ.] WR 120: 53
[Kazan Pedagog. Inst., Alma-Ata, Kazakh SSR.]

Gambaryan, P. P., K. M. Gasparyan, V. K. Grigoryan, and V. A. Airumyan. [COUNTING UNGULATES FROM A HELICOPTER IN STRONGLY DISSECTED TOPOGRAPHY.] In: (Resources of game animals of the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 104-109. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 5I232. Transl. of Russian abstr.] WR 120: 53

Gerasimov, Yu. A. [EXPERIENCE IN COUNTING ELK FROM AIRCRAFT AND A STATISTICAL CHECK OF THE RESULTS.] Primenenie Matematicheskikh Metodov v Biologii. Leningradsk. Univ. (Leningrad) 2: 234-238. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 5I231. Transl. of Russian abstr.] WR 120: 53

Gorelov, Yu. K. [CHANGES IN THE DISTRIBUTION AND POPULATION SIZE OF WILD UNGULATES OF BADKHYZ (SOUTHEASTERN TURKMENIA) DUE TO THE ANTHROPOGENIC FACTORS.] In: (Zoogeography of the land.) (Tashkent). p. 77-78. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 10I254. In Russian.] WR 120: 53

Gorelov, Yu. K. [A COUNT OF WILD SHEEP (OVIS AMMON CYCLOCEROS) IN THE BADKHYZ PRESERVE.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 125-128. 1963. [From Biol. Abstr. 46 (5), 1965, from Referat. Zhur., Biol., 1964, no. 5I236. Transl. of Russian abstr.] WR 120: 53

Gorelov, Yu. K. [WATERING MOUNTAIN SHEEP (OVIS AMMON CYCLOCEROS) IN THE BADKHYZ GAME RESERVATION (TURKMENIA).] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(2): 61-70, illus. 1964. [From Biol. Abstr. 46(3), 1965. In Russian.] WR 120: 53

Hennig, R. [ON THE PROBLEM OF DEER DAMAGES.] Waldhygiene 5(2/3): 33-49. 1963. [From Bibliog. Agr. 28(2), 1964. In German.] WR 120: 53

Ishadov, N. [DATA ON THE DISTRIBUTION AND POPULATION SIZE OF MOUNTAIN SHEEP IN TURKMENIA.] In: (Zoogeography of the land.) (Tashkent). p. 111-112. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 10I265. In Russian.] WR 120: 53

Jewell, P. A., and V. P. W. Lowe. A TRIAL WITH THE PROJECTILE-SYRINGE RIFLE TO CAPTURE WILD RED DEER ON RHUM. J. Zool. (Proc. Zool. Soc. London) 146(3): 272-277, 1 fig. Oct. 1965. WR 120: 53
[Wellcome Inst. Comp. Physiol., Regent's Park, London, England.] Abstract: A brief account is given of a field trial to immobilize wild red deer on the island of Rhum. The difficulties of estimating the weight of a wild animal, and the range and technical limitations of the apparatus are discussed. A number of deer were satisfactorily caught and marked and the potentialities of the method are described.

Kaznevskii, P. F. [EXPERIENCE IN COUNTING MARALS IN THE BASHKIR PRESERVE.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 110-112. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 5I234. Transl. of Russian abstr.] WR 120: 54
"Cervus elaphus maral."

Klimstra, W. D., and Keith Thomas. EFFECTS OF DEER BROWSING ON SOYBEAN PLANTS, CRAB ORCHARD NATIONAL WILDLIFE REFUGE. Trans. Ill. State Acad. Sci. 57 (3): 179-181. 1964. [From Biol. Abstr. 46(7), 1965.] WR 120: 54
[Southern Ill. Univ., Carbondale.] Randomly selected soybean plants were marked to establish utilization by white-tailed deer. Seventy-four percent of the tagged plants were browsed at least once during the growing season. The reduction in the production of seed of clipped plants averaged 48% per plant; the total damage to the soybean crop was 39%. Solutions to the problem include reduction of the deer population and/or application of repellents to field borders.

Kotov, V. A. [CATCHING AND MARKING THE GOAT, CAPRA CAUCASICA, IN THE WESTERN CAUCAUSUS.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(2): 54-60, illus. 1964. [From Biol. Abstr. 46(3), 1965. In Russian.] WR 120: 54

Krasiński, Zbigniew. O ŻUBRACH NA WOLNOŚCI W PUSZCZY BIAŁOWIESKIEJ. [BISON IN THE WILD SANCTUARY OF BIAŁOWIEŻA, POLAND.] Chrońmy Przyrode Ojczysta 19(5): 3-8, illus. 1963. [From Biol. Abstr. 46(1), 1965. In Polish.] WR 120: 54
[State Council Protect. Nat., Warsaw, Poland.]

Lisitzin, P. HISTOLOGICAL STUDY OF A PARASITIC NODULE IN THE SUBCUTANEOUS TISSUE OF THE MUZZLE OF A REINDEER (RANGIFER TARANDUS); PRELIMINARY REPORT. Nord. Vetmed. 16(4): 390-395. Apr. 1964. [From Bibliog. Agr. 28(8), 1964.] WR 120: 54

Little, S., and H. A. Somes. ATLANTIC WHITE-CEDAR BEING ELIMINATED BY EXCESSIVE ANIMAL DAMAGE IN SOUTH JERSEY. U. S. Forest Serv. Res. Note NE-33. 3 p., 1 fig. 1965. WR 120: 54
[USDA, New Lisbon, N. J.] "The evidence is incontrovertible that excessive deer browsing is now eliminating Atlantic white-cedar from many swamps in the New Jersey Pine Region where the species had maintained itself fairly successfully through three centuries of the white man's cuttings and fires."

McEwan, E. H., A. J. Wood, and H. C. Nordan. BODY TEMPERATURE OF BARREN GROUND CARIBOU. Canadian J. Zool. 43(5): 683-687, 1 fig. Sept. 1965. WR 120: 54
[Canadian Wildl. Serv., Vancouver, British Columbia.] Abstract: Rectal temperatures were recorded for barren ground caribou during their first 100 days of life. The normal rectal temperature of caribou was found to be 39° ± 0.78°C. Temperature elevations of 2.2°C occurred as a result of activity. The practical implications of these observations are discussed.

Michurin, L. N. [THE DISTRIBUTION AND MIGRATION OF WILD REINDEER ON THE TAIMYR PENINSULA.] Trudy Vses. Sel'skokhoz. Inst. Zaochnogo Obrazovaniya 15: 150-159. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 1I250. Transl. of Russian abstr.] WR 120: 54

Nasimovich, A. A. MAIN TRENDS IN THE DEVELOPMENT OF METHODS FOR COUNTING WILD UNGULATES. In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 64-83. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 5I237. Transl. of Russian abstr.] WR 120: 54

Neustein, S. A. PRELIMINARY RESULTS OF LONGEVITY TRIALS OF SYNTHETIC TWINES USED FOR DEER NETTING. Scot. Forestry 18(3): 184-188. July 1964. [From Bibliog. Agr. 29(1), 1965.] WR 120: 54

Novikov, G. A., and E. K. Timofeeva. [THE NUTRITION OF ROE-DEER AND ITS FORESTRY SIGNIFICANCE IN FOREST-STEPPE OAK ASSOCIATION.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(2): 39-53. Mar.-Apr. 1964. [From Bibliog. Agr. 28 (9), 1964. In Russian with English summ.] WR 120: 55

Ogryzkov, S. E. [THE COURSE OF FOOT-AND-MOUTH DISEASE IN REINDEER.] Veterinariya 10: 54-55. 1962. [From Bibliog. Agr. 28(5), 1964. Photocopies of 2-page English translation no. 13502 may be ordered from Natl. Agr. Library, USDA, Washington, D. C.] WR 120: 55

Ovcharenko, D. A. [BIOLOGY OF DICROCOELIUM DENDRITICUM UNDER THE CONDITIONS OF THE PARK-DEER STATE FARMS OF THE FAR EAST.] Vestnik. Leningr. Univ. No. 9 Ser. Biol. 2: 35-39. 1964. [From Biol. Abstr. 46(12), 1965. In Russian with English summ.] WR 120: 55

Popov, M. V. [THE ROE DEER IN YAKUTIYA AND MEASURES FOR ITS CONSERVATION.] In: (Problems of conservation in Yakutiya.) (Yakutsk). p. 107-112. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I263. Transl. of Russian abstr.] WR 120: 55

Prenzlow, Edgar J. A LITERATURE REVIEW ON PRONGHORN BEHAVIOR. Colo. Dept. Game, Fish & Parks and Colo. Coop. Wildl. Res. Unit. Special Rept. no. 3. iv + 28 p., 5 figs. July 1965. WR 120: 55
[Star Route, Livermore, Colo.] With sections on the taxonomy, distribution, history, morphology, life history, mortality, mannerisms, habitat preference, kid behavior during tagging operations, activity periods, movements, migrations, effects of barriers, and social behavior of Antilocapra americana.

Rabsteinek, O. [BIOLOGICAL CONTROL OF FOREST STAND INJURIES CAUSED BY RED DEER.] Lesn. Prace 42(10): 458-461. Oct. 1963. [From Bibliog. Agr. 28(4), 1964. In Czech.] WR 120: 55

Ramsey, Charles W. POTENTIAL ECONOMIC RETURNS FROM DEER AS COMPARED WITH LIVESTOCK IN THE EDWARDS PLATEAU REGION OF TEXAS. J. Range Mgmt. 18(5): 247-250. Sept. 1965. WR 120: 55
[Kerr Wildl. Mgmt. Area, Hunt, Texas.] Highlight: Potential economic return from deer was greater than that from livestock under conditions of average prevailing prices and adequate deer harvest. Data computed from rancher surveys indicated that the deer herd was maintained as a liability to the ranchers collectively, primarily because of inadequate harvest.

Rashek, V. L. [NOTES ON THE REPRODUCTION OF THE SAIGA ON BARSA-KELMES ISLAND IN THE ARAL SEA.] Trudy Inst. Zool. Akad. Nauk Kazakhsk. SSR 20: 164-193. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 5I265. Transl. of Russian abstr.] WR 120: 55

Rogers, Lore A. CARIBOU ON KATAHDIN. Appalachia (Boston) 35(2): 292-300, illus. 1964. [From Biol. Abstr. 46(6), 1965.] WR 120: 55

Scotter, George W. CARIBOU COUNTDOWN. North 12(6): 13-15, illus. Nov.-Dec. 1965. WR 120: 55
[Canadian Wildl. Serv., Edmonton, Alberta.] Dwindling barren-ground caribou herds were estimated at 670 thousand in 1949 and have now declined to about 200 thousand. Nearly 1700 caribou were tagged during June-July 1964 while migrating across the Thelon River.

Simkin, D. W. REPRODUCTION AND PRODUCTIVITY OF MOOSE IN NORTHWESTERN ONTARIO. J. Wildl. Mgmt. 29(4): 740-750, 1 fig. Oct. 1965. WR 120: 55
[Ontario Dept. Lands & Forests, Southern Res. Sta., Maple.] Abstract: A study of reproduction and productivity of moose (Alces alces) in the Red Lake Road area of northwestern Ontario was based on a macroscopic and, when necessary, a microscopic examination of 210 pairs of ovaries and an analysis

of the ages of 1,177 animals killed by hunters in early October, 1957-61. Thirty-five percent of the yearlings and 86 percent of the adults had primary corpora lutea within their ovaries. The ovulation rate, calculated by counting the number of primary corpora lutea, was 127 per 100 adult cows and 37 per 100 yearling cows. An average of at least 33 percent of the moose whose ovaries were examined had experienced an early September estrous cycle which did not result in fertilization. There is a linear relationship between the number of pigmented scars of corpora lutea in a pair of ovaries and the age of a moose. Pregnancy rates determined by microscopic identification of 6-month-old pigmented scars of corpora lutea of pregnancy were 17 calves per 100 yearlings and 113 calves per 100 older cows. The fertilization rate for adults was 89 percent and for yearlings 45 percent. Net productivity was 24 percent. Gross productivity and rate of increase were 25 percent and 34 percent, respectively. A yearling vulnerability factor ranging from 1.4 to 1.8 was determined for the 5 years of data. Comparisons of the Ontario data, obtained by ovarian analysis, with data from other areas reveal many similarities and show that the herd was as productive as any reported in North America.

Siudskii, A. A., and I. G. Shubin. [AERIAL VISUAL COUNTING OF SAIGAS, DZERENS (PROCAPRA GUTTUROSAL), AND THEIR NUMBERS IN THE KAZAKHSTAN DESERTS.] In: (Resources of game animals in the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 84-91. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 5I229. Transl. of Russian abstr.] WR 120: 56

Solomatin, A. O. [BREEDING AND REPRODUCTIVE BEHAVIOR OF THE ONAGER (EQUUS ONAGER).] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(2): 71-82, illus. 1964. [From Biol. Abstr. 46(6), 1965. In Russian.] WR 120: 56

Treus, V. D. [RESTORATION OF THE PRZHEVALSKY HORSE (EQUUS PRZHEVALSKI) IN THE USSR.] Dopovidi Akad. Nauk Ukr. RSR 9: 1254-1258. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 12I305. Transl. of Russian abstr. Original in Ukrainian with Russian and English summ.] WR 120: 56

Ustinov, S. K. [A COUNT OF ELK ACTIVITIES ON A FEEDING TRACT IN THE BARGUZINSK PRESERVE.] Trudy Barguzinsk Gos. Zapovednika 4: 227-228. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 5I252. Transl. of Russian abstr.] WR 120: 56

Velizhanin, A. G. [PUNCTATE DEER (CERVUS NIPPON) IN THE SUPUTINKA NATIONAL RESERVE.] In: (Conservation in the Far East.) (Vladivostok). p. 121-122. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 10I258. In Russian.] WR 120: 56

Wuttky, K. [THE COURSE OF ACCLIMATIZATION OF THE MOUFLON IN THE EASTERN HARZ MOUNTAINS, ILLUSTRATED ACCORDING TO DOCUMENTARY SUPPORT.] Deut. Akad. Landwirtwiss. Tagungsber. 61: 23-38. 1963. [From Bibliog. Agr. 28(6), 1964. In German.] WR 120: 56
"In relation to forestry."

Yurgenson, P. B. [COUNTING THE MOOSE OVERWINTERING IN FOREST TRACTS OF THE CENTRAL BELT.] In: (Resources of game animals of the USSR and counting them.) Akad. Nauk SSSR (Moscow). p. 118-124. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1964, no. 5I233. Transl. of Russian abstr.] WR 120: 56

Yurlov, K. T. [REINDEER IN THE WEST SIBERIAN LOWLAND.] Priroda 12: 105-107. 1958. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1959, no. 84566. Transl. of Russian abstr.] WR 120: 56

Yurlov, K. T. [PRESENT DISTRIBUTION OF THE ARGALI (OVIS AMMON) IN SOUTHEASTERN ALTAI.] In: (Zoogeography of the land.) (Tashkent). p. 372. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 10I266. In Russian.] WR 120: 57

Yurlov, K. T. [SOME REGULAR DISTRIBUTION PATTERNS OF THE ELK IN AREAS OF THE SOUTHERN PART OF THE WEST SIBERIAN LOWLAND.] In: (Zoogeography of the land.) (Tashkent). p. 373-374. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 10I261. In Russian.] WR 120: 57

Zhirnov, L. V. [EXPERIMENT ON THE USE OF LARGE-SCALE TAGGING FOR A STUDY OF THE DISTRIBUTION AND MIGRATION OF SAIGA IN THE WESTERN CASPIAN REGIONS (PRELIMINARY COMMUNICATION).] Migratsii Zhivotnykh. Akad. Nauk SSSR (Moscow) 3: 40-61. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I279. Transl. of Russian abstr.] WR 120: 57

Zhirnov, L. V. [COUNTING SAIGAS FROM AN AIRPLANE AND THE SAIGA STOCKS OF THE AREA WEST OF THE CASPIAN SEA.] In: (Resources of game animals in the USSR and counting them.) Akad Nauk SSSR (Moscow). p. 92-98, maps. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 5I230. Transl. of Russian abstr.] WR 120: 57

## DEER (Odocoileus)

Banasiak, Chester F. WHAT ARE YOUR CHANCES? BIG BUCK ODDS. Maine Fish & Game 7(2): 11-13, 4 figs. Fall 1965. WR 120: 57

State average of big bucks [those weighing 200 pounds or more] in the Maine kill was 12 per thousand deer. This was 2.8 big bucks for each thousand deer hunters. Record dressed weight for bucks is reported at 351 pounds.

Behrend, Donald F. NOTES ON FIELD IMMOBILIZATION OF WHITE-TAILED DEER WITH NICOTINE. J. Wildl. Mgmt. 29(4): 889-890. Oct. 1965. WR 120: 57

[State Univ. Coll. Forestry, Newcomb, N. Y.] Abstract: Field-capture operations utilizing nicotine alkaloid delivered by the Cap-Chur gun were conducted in a forested area of the central Adirondack Mountains of northern New York during the summer of 1964. Of 37 white-tailed deer (Odocoileus virginianus) known to have been hit, 26 were recovered, but only 18 survived. Mortality appeared more closely related to the region of the animal penetrated by the syringe than to dosage per pound of body weight. Thus, 28 hits in solid muscle resulted in but 3 deaths (10.7 percent), while 5 of 8 animals hit in other regions died (62.5 percent). Success of live capture was far greater during hours of darkness than daylight, recoveries being 69 and 33 percent, respectively. This difference appeared to be directly attributable to differences in flight behavior, deer being shot at night fleeing initially for a much shorter distance than those shot in daylight.

Crouch, G. L. MAJOR FACTORS INFLUENCING SEEDLING BROWSING BY DEER UNDER KNOWN HERD DENSITIES. West. Forest. Conserv. Assoc. West. Reforest. Coord. Com. Proc. Ann. Meeting. p. 46-47. 1964. [From Bibliog. Agr. 29(10), 1965.] WR 120: 57

Donaldson, John C., and J. Kenneth Doutt. ANTLERS IN FEMALE WHITE-TAILED DEER: A 4-YEAR STUDY. J. Wildl. Mgmt. 29(4): 699-705, 2 figs. Oct. 1965. WR 120: 57

[Univ. Pittsburgh Med. School, Pittsburgh, Pa.] Abstract: Forty-seven antlered female deer (Odocoileus virginianus borealis) were reported among 162,000 bucks killed during four hunting seasons in Pennsylvania, 1958-61. Their distribution in the state was not uniform. The viscera of 31 antlered does, so-called, were examined. Of these, 17 were functional females, 4 were males with undescended testes in the intra-abdominal fat, 1 was a hermaphrodite, 1 bore an adrenal-type tumor, and 8 others could not be classified with the material available. The antlers of 25 were in the velvet, while only 6 had

polished antlers, normal among males at that season. The condition of the antlers when related to that of the internal organs correlated very well with the theory of antler growth as developed by the late George B. Wislocki and his associates, and now under investigation by R. J. Goss. The adrenal glands showed no consistent abnormalities.

Donohoe, Robert W. LEPTOSPIROSIS IN OHIO DEER, 1957-60. Game Res. Ohio 2: 201-204. Aug. 1963. WR 120: 58
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.]

Downing, Robert L. AN UNUSUAL SEX RATIO IN WHITE-TAILED DEER. J. Wildl. Mgmt. 29(4): 884-885. Oct. 1965. WR 120: 58
[Bur. Sport Fisheries & Wildl., Asheville, N. C.] Abstract: The breeding ages, sex ratios, and densities of white-tailed deer (Odocoileus virginianus) are described for a 746-acre enclosure at Albany, Georgia, where, over a 3-year period, 30 fawns were reared in the ratio of four bucks per doe. The nearly even sex ratio among adults invites consideration of the theory that the first service of a buck each year produces predominantly male offspring, while subsequent breedings produce predominantly female offspring.

Halls, L. K., C. E. Boyd, D. W. Lay, and P. D. Goodrum. DEER FENCE CONSTRUCTION AND COSTS. J. Wildl. Mgmt. 29(4): 885-888, 3 figs. Oct. 1965. WR 120: 58
[SE Forest Expt. Sta., Nacogdoches, Texas.] Abstract: Two 153-acre deer pens, consisting of 4.4 miles of boundary fence 8.5 feet high and 0.8 mile of fenced 0.25-acre exclosures, were constructed in 1964 at a total cost of $16,429: $6,816 for labor and right-of-way clearing and $9,613 for materials.

Kradel, D. C., and H. W. Dunne. BRAIN TUMORS (EPENDYMOMAS) IN DEER. J. Am. Vet. Med. Assoc. 147(10): 1096-1098, 4 figs. 15 Nov. 1965. WR 120: 58
[Pa. State Univ., University Park.]

Marburger, Rodney G., and Jack Ward Thomas. A DIE-OFF IN WHITE-TAILED DEER OF THE CENTRAL MINERAL REGION OF TEXAS. J. Wildl. Mgmt. 29(4): 706-716, 3 figs. Oct. 1965. WR 120: 58
[Texas Parks & Wildl. Dept., Kerrville.] Abstract: A die-off of 20,000-31,000 white-tailed deer (Odocoileus virginianus) occurred during January-August, 1962, on a 350,000-acre study area in the Central Mineral Region of Texas. This loss was indicated by both deer census data and carcass counts. From the fall of 1957 to the fall of 1961, deer populations increased from 16.9 ± 2.7 deer per 100 acres to 26.1 ± 3.7. The 1962 census, following the die-off, was 14.6 ± 2.1 deer per 100 acres--a reduction of approximately 44 percent, of which some 30,000 were lost in the die-off. The deer herd responded to lowered population pressures with a higher reproductive rate, and the 1963 deer census showed a population of 26.7 ± 3.7 deer per 100 acres. Searches of 30, 128-acre plots (3,840 acres) for carcasses revealed a loss of 7.3 ± 1.7 deer per 100 acres (20,000-31,000 deer). This agreed closely with mortality losses estimated from census counts. Deer harvests, though the highest reported for North America, were inadequate. Deer lost in this die-off approximated the legal kill during the preceding three seasons combined. Antlerless deer harvest was reduced following the die-off. Since population recovery occurred in 1 year, hunting pressure on antlerless deer should have been maintained in the face of natural herd reduction to hold deer populations at an acceptable level.

Miller, Wilmer J., Arnold O. Haugen, and David J. Roslien. NATURAL VARIATION IN THE BLOOD PROTEINS OF WHITE-TAILED DEER. J. Wildl. Mgmt. 29(4): 717-723, 2 figs. Oct. 1965. WR 120: 58
[Iowa State Univ., Ames.] Abstract: Starch gel electrophoretic patterns of blood from 200 white-tailed deer (Odocoileus virginianus), mostly from the DeSoto Bend area of the Missouri River on the Iowa-Nebraska border, disclosed two hemoglobin patterns and three presumed transferrin patterns which were compared with each other and with sex and age. This technique disclosed presumptive genetic variation and might be used with blood grouping or alone to characterize different populations of one species or even to estimate mixtures of stocks.

Nixon, Charles M. DEER HARVEST ANALYSIS, 1959. Game Res. Ohio 2: 60-69, 1 fig. Aug. 1963. WR 120: 59
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] For Ohio in 1959 there was an estimated kill of 2751 deer. The sex ratio of the kill was calculated at 1.14♂♂ : 1.00♀♀. The adult doe to fawn ratio was calculated as 100 : 139.

Nixon, Charles M. DEER AGE AND SEX RATIOS, 1960. Game Res. Ohio 2: 69-78, 6 figs. Aug. 1963. WR 120: 59
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Indicated sex ratio of Ohio deer kill derived from various methods was 116♂♂ : 100♀♀. Nearly 70% of the deer examined were yearlings or fawns.

Nixon, Charles M. DEER PRODUCTIVITY IN OHIO, 1951-60. Game Res. Ohio 2: 113-118, 1 fig. Aug. 1963. WR 120: 59
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.]

Reynolds, Hudson G. MULE DEER KILLED BY LIGHTNING. J. Mammal. 46(4): 676. 30 Nov. 1965. WR 120: 59
[Rocky Mountain Forest & Range Expt. Sta., Tempe, Ariz.]

Siglin, Roger J. MOVEMENTS AND CAPTURE TECHNIQUES / A LITERATURE REVIEW OF MULE DEER. Colo. Dept. Game, Fish & Parks and Colo. Coop. Wildl. Res. Unit. Special Rept. no. 4. iv + 39 p., [28] figs. July 1965. WR 120: 59
With sections on capture methods (box traps, corral traps, snares, and drug capture), marking methods (tagging, dyes and paints, mutilation, and radio-tracking), and season movements [with some material on white-tailed deer] of the mule deer.

Van Etten, Robert C., and Carl L. Bennett, Jr. SOME SOURCES OF ERROR IN USING PELLET-GROUP COUNTS FOR CENSUSING DEER. J. Wildl. Mgmt. 29(4): 723-729. Oct. 1965. WR 120: 59
[US F&WS, Trenton, N. J.] Abstract: The validity of the assumption that all pellet groups within sample plots are found and aged correctly was tested by checking two game biologists' ability to find and age pellet groups in the field. The biologists differed significantly in their ability to make accurate counts, but both made errors of missing groups and calling new groups old. Observations on the persistence of pellet groups deposited at different times of the year and in different cover types for 5 years, 1953-57, indicated that some pellet groups can persist at least 5 years, with a few appearing similar to new groups even 2 years after being deposited.

Wolff, W. A., R. W. Davis, and W. V. Lumb. CHLORAL HYDRATE-HALOTHANE-NITROUS OXIDE ANESTHESIA IN DEER. J. Am. Vet. Med. Assoc. 147(10): 1099-1101, 2 figs. 15 Nov. 1965. WR 120: 59
[Colo. State Univ., Fort Collins.] Summary: A method of combined chloral hydrate, halothane, and nitrous oxide anesthesia was used in mule deer. Duration of anesthesia was adequate for prolonged surgery, and recovery periods were routinely short and quiet.

## MAMMALS--MARINE

Badamshin, B. I. [BIOLOGICAL AND TECHNICAL PREREQUISITES FOR INCREASING THE BAG OF CASPIAN SEALS ON ISLAND ROOKERIES.] In: (Second All-Union Conference for the Study of Marine Mammals, 1963.) Akad. Nauk SSSR (Moscow-Leningrad). p. 3-4. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I295. In Russian.] WR 120: 59

Bannister, J. L., and Ray Gambell. THE SUCCESSION AND ABUNDANCE OF FIN, SEI AND OTHER WHALES OFF DURBAN. Norsk Hvalfanst-Tidende (Norwegian Whaling Gazette) 54(3): 45-60. Mar. 1965. [From J. Mammal. 46(4), 1965.] WR 120: 59

Bel'kovich, V. M., and A. V. Yablokov. [THE STRUCTURE OF THE STOCK OF THE TOOTHED WHALES (ODONTOCETI).] In: (The Second All-Union Conference for the Study of Marine Mammals.) Akad. Nauk SSSR (Moscow-Leningrad). p. 4-5. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 12I282. In Russian.] WR 120: 60

Bertram, G. C. L., and C. K. Ricardo Bertram. MANATEES IN THE GUIANAS. Zoologica [NY] 49(2): 115-120. 1964. [From Biol. Abstr. 46(13), 1965.] WR 120: 60
[Univ. Cambridge, Cambridge, England.]

Bianki, V. V. [THE FREQUENCY OF OCCURRENCE OF BELUGAS (WHITE WHALE, DELPHINAPTERUS LEUCAS) AT THE HEAD OF THE GULF OF KANDALAKSHA.] In: (The Second All-Union Conference for the Study of Marine Mammals.) Akad. Nauk SSSR (Moscow-Leningrad). p. 6-7. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 12I264. In Russian.] WR 120: 60

Brown, S. G., and R. W. Vaughan. WEIGHTS OF THE SOUTHERN ELEPHANT SEAL. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 54(2): 32-33. Feb. 1965. [From J. Mammal. 46(4), 1965.] WR 120: 60

Burns, John J. THE WALRUS IN ALASKA / ITS ECOLOGY AND MANAGEMENT. Alaska Dept. Fish & Game. ii + 47 p., 2 figs. Aug. 1965. WR 120: 60
Adult females produce a calf every 2.3 years, resulting in a recruitment rate of about 14.0%. Average annual mortality in the male segment of the herd (and probably in the herd as a whole) is presently computed at about 13.0%. The net annual increase is therefore calculated at approximately 1%. Soviet and American hunters kill an estimated 11,700 walrus per year, from a total population estimated at no less than 90,000 animals. A continued increase in the walrus population can be brought about by adopting conservative hunting practices, which would decrease the number of animals killed without affecting the number harvested. About one-half of the total annual kill is not being retrieved under present hunting practices.--From abstr.

Caldwell, David K., and David H. Brown. TOOTH WEAR AS A CORRELATE OF DESCRIBED FEEDING BEHAVIOR BY THE KILLER WHALE, WITH NOTES ON A CAPTIVE SPECIMEN. Bull. Calif. Acad. Sci. 63(3): 128-140, illus. 1964. [From Biol. Abstr. 46(2), 1965.] WR 120: 60
[Los Angeles County Museum, Los Angeles, Calif.] Tooth wear in 11 specimens of the killer whale, Orcinus orca (L.), from both the Atlantic and Pacific oceans, can be correlated with the ferocious feeding behavior which characterizes this member of the family Delphinidae. Measurements, pathological data after death and brief notes on behavior during short-term captivity are included for an adult female.

Csordas, S. E. SEAL MARKING EXPERIMENT AT MACQUARIE ISLAND. Victorian Nat. 80(10): 318-321. 1964. [From Biol. Abstr. 46(7), 1965.] WR 120: 60

Csordas, S. E. WANDERING ELEPHANT SEAL. Victorian Nat. 80(11): 336-338. 1964. [From Biol. Abstr. 46(2), 1965.] WR 120: 60
Observations are reported on the breeding activities of two elephant seals (Mirounga leonina), observed on Macquarie Island, that had been branded 14 years earlier on Campbell Island, 500 miles distant.

Gaskin, D. E. RETURN OF THE SOUTHERN RIGHT WHALE (EUBALAENA AUSTRALIS DESM.) TO NEW ZEALAND WATERS, 1963. Tuatara 12(2): 115-118, illus. 1964. [From Biol. Abstr. 46(8), 1965.] WR 120: 60
[Mar. Dep., Fish Lab., Wellington, New Zealand.]

Keyes, Mark C. PATHOLOGY OF THE NORTHERN FUR SEAL. J. Am. Vet. Med. Assoc. 147(10): 1090-1095. 15 Nov. 1965. WR 120: 61

[Marine Mammal Biol. Lab., USDI, Seattle, Wash.] Summary: Nearly half a million fur seals (Callorhinus ursinus) are born each year on the Pribilof Islands, Alaska, but as few as 10% may survive to be harvested at age 2 to 5 years. The known or suspected causes of mortality at sea, where most deaths occur, are predation, starvation, weather, parasitism, food poisoning, and infectious diseases. The major known causes of the 5 to 20% mortality of pups on land are malnutrition, trauma, parasitism, and gastrointestinal and miscellaneous infections.

Klumov, S. K. [THE RIGHT (JAPANESE) WHALES (BALAENIDEA) IN THE PACIFIC OCEAN.] Izd. Akad. Nauk SSSR (Moscow). Trudy Inst. Okeanol. Akad. Nauk SSSR 58: 202-297, illus., maps. 1962. [From Biol. Abstr. 46(1), 1965. In Russian with English summ.] WR 120: 61

Klumov, S. K. [THE DIET OF BALEEN WHALES IN THE MAIN FISHING REGIONS OF THE WORLD OCEAN.] In: (The Second All-Union Conference for the Study of Marine Mammals.) Akad. Nauk SSSR (Moscow-Leningrad). p. 22-24. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 12I280. In Russian.] WR 120: 61

Marakov, S. V. [EXPERIMENTAL USE OF PHOTOGRAPHY IN A CENSUS AND STUDY OF THE SEA OTTER, THE FUR SEAL AND THE SEA LION.] Sbornik Nauchn.-Tekh. Inform. Vses. Nauchn.- Issled. Inst. Zhivotnogo Syr'ya Pushniny 4(7): 43-52. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 12I200. Transl. of Russian abstr.] WR 120: 61

Pastukhov, V. D. [METHODS FOR COUNTING LAKE BAIKAL SEALS.] In: (The Second All-Union Conference for the Study of Marine Mammals.) Akad. Nauk SSSR (Moscow-Leningrad). p. 35-36. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I150. In Russian.] WR 120: 61

Peterson, Richard S. DRUGS FOR HANDLING FUR SEALS. J. Wildl. Mgmt. 29(4): 688-693. Oct. 1965. WR 120: 61

[Johns Hopkins Univ., Baltimore, Md.] Abstract: Four drugs that alter central nervous system function and three that affect peripheral nerve sites were tested on northern fur seals (Callorhinus ursinus) in attempts to obtain field immobilization. Nearly 300 animals were injected during the summers of 1961, 1962, and 1963 at St. Paul Island, Alaska. Most of the subjects were adult males on breeding grounds. Automatic projectile svringes were used. Phencyclidene at dosages of 0.10-0.20 mg/kg was useful as a long-lasting depressant, and succinylcholine at dosages of 0.30-0.37 mg/kg was useful as a short-acting paralytic agent. Thiopental sodium, propiopromazine, insulin, nicotine, and gallamine were also tested.

Radford, Keith W., Robert T. Orr, and Carl L. Hubbs. REESTABLISHMENT OF THE NORTHERN ELEPHANT SEAL (MIROUNGA ANGUSTIROSTRIS) OFF CENTRAL CALIFORNIA. Proc. Calif. Acad. Sci., ser. 4, 31(22): 601-612, illus. 15 Jan. 1965. [From J. Mammal. 46(4), 1965.] WR 120: 61

Rae, Bennet B. THE FOOD OF THE COMMON PORPOISE (PHOCAENA PHOCAENA). J. Zool. (Proc. Zool. Soc. London) 146(1): 114-122. Sept. 1965. WR 120: 61

[Marine Lab., Aberdeen, Scotland.] Abstract: The stomach contents of porpoises from Scottish waters were examined primarily to ascertain if these animals prey on salmon. The dominant fish in the food were clupeoids and gadoids with herring and whiting the commonest individual species. The food types were predominantly pelagic in habit and most of the fish eaten appeared to be less than 25 cm in length. No evidence of salmon was found in the stomachs and from a study of the jaws and dentition of the common porpoise it seems unlikely that the animal is able to eat any fish as large as a salmon.

Ridgway, Sam H. MEDICAL CARE OF MARINE MAMMALS. J. Am. Vet. Med. Assoc. 147 (10): 1077-1085, 4 figs. 15 Nov. 1965. WR 120: 62
[Life Sciences Dept., U. S. Naval Missile Center, Point Mugu, Calif.] Anatomy, disease problems, parasites, normal physiological values, clinical procedures, gastrointestinal foreign bodies, anesthesia for porpoises, surgery and drugs are topics of discussion.

Ridgway, Sam H., and D. Gordon Johnston. TWO INTERESTING DISEASE CASES IN WILD CETACEANS. Am. J. Vet. Res. 26(112): 771-775, 6 figs. May 1965. WR 120: 62
[Life Sciences Dept., U. S. Naval Missile Center, Point Mugu, Calif.] Infestation of larval tapeworm cysts in Delphinus bairdi and death as a result of fish filling rumen and esophagus, causing pressure against air passages of Lagenorhynchus obliquidens.

Shcheblanov, V. G. [SOME QUESTIONS ON THE REGULATION OF SEAL HUNTING IN THE CASPIAN SEA.] In: (Second All-Union Conference for the Study of Marine Mammals, 1963.) Akad. Nauk SSSR (Moscow-Leningrad). p. 49. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I296. In Russian.] WR 120: 62

## MAMMALS--OTHER GROUPS

Brack, Antonio. LAS MUCAS DEL PERU. [THE "MUCAS" (DIDELPHIDAE) OF PERU.] Biota 5(38): 79-81, illus. 1964. [From Biol. Abstr. 46(2), 1965. In Spanish.] WR 120: 62

Storr, G. M. THE ENVIRONMENT OF THE QUOKKA (SETONYX BRACHYURUS) IN THE DARLING RANGE, WESTERN AUSTRALIA. J. Roy. Soc. Western Australia 47(1): 1-2, illus. 1964. [From Biol. Abstr. 46(5), 1965.] WR 120: 62
[Western Australian Museum, Perth, Australia.]

Storr, G. M. STUDIES ON MARSUPIAL NUTRITION. IV. DIET OF THE QUOKKA, SETONIX BRACHYURUS (QUOY AND GAIMARD), ON ROTTNEST ISLAND, WESTERN AUSTRALIA. Australian J. Biol. Sci. 17(2): 469-481, map. 1964. [From Biol. Abstr. 46(3), 1965.] WR 120: 62
[Western Australian Museum, Perth, Australia.]

## BIRDS--GENERAL

Danilov, N. N. [A SYSTEM OF MEASURES FOR THE CONSERVATION OF BIRDS FROM THE URALS.] Okhrana Prirody na Urale (Sverdlovsk) 3: 63-68. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 12I127. Transl. of Russian abstr.] WR 120: 62

Fennell, Chester M. STOMACH ANALYSES OF SOME TAIWAN BIRDS. Bull. Inst. Zool. Acad. Sinica 2(2): 65-73. 1963. [From Biol. Abstr. 46(14), 1965.] WR 120: 62
[Hdqtrs. Eighth U. S. Army, APO 301, San Francisco, Calif.] The stomach contents of 238 specimens representing 65 spp. of birds are analysed.

Mitropol'skii, O. V. [DETERMINING THE AGE OF BIRDS BY THE LENGTH OF THE REMIGES.] Ornitologiya (Moscow) 4: 416-417. 1962. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1963, no. 20I161. Transl. of Russian abstr.] WR 120: 62

Perdeck, A. C. JAARVERSLAG VAN HET VOGELTREKSTATION OVER 1962. [ANNUAL REPORT OF THE BIRD TRACKING STATION FOR 1962.] Limosa 36: 129-137. 1963. [From Ibis 107(4), 1965. In Dutch.] WR 120: 63

Abstract: Results of the final displacement experiments with Sturnus vulgaris: adult birds caught in Holland and released in Spain tended to return to their original winter quarters; juveniles flew E.N.E. from Spain in spring. More information is given of the standard directions of migration of the Scandinavian population of Fringilla coelebs.

Perdeck, A. C. JAARVERSLAG VAN HET VOGELTREKSTATION OVER 1963. [ANNUAL REPORT OF THE BIRD TRACKING STATION FOR 1963.] Limosa 37: 211-220. 1964. [From Ibis 107(4), 1965. In Dutch.] WR 120: 63

Abstract: Observations of the standard direction of Fringilla coelebs, on migration from Norway, while over Heligoland and the Frisian Islands.

Prestt, Ian. AN ENQUIRY INTO THE RECENT BREEDING STATUS OF SOME OF THE SMALLER BIRDS OF PREY AND CROWS IN BRITAIN. Bird Study 12(3): 196-221, 19 figs. Sept. 1965. WR 120: 63

[Monks Wood Expt1. Sta., Huntingdon, England.] The results suggest that the sparrowhawk and barn owl have decreased widely; the buzzard, merlin and kestrel less so; and the tawny owl only locally. The crows have generally increased. A map is given for each species showing the extent and severity of changes. The decreases in the birds of prey mostly occurred in the late 1950s and were most evident in eastern England. They were thought by most of the contributors to be principally due to toxic chemicals, except for those of the buzzard and the merlin which were connected with myxomatosis and loss of habitat respectively. The increases in the crows are part of a long-term trend and were attributed to a decrease in the activities associated with game preservation.--From summ.

Priklonskii, S. G., V. V. Bianki, V. N. Karpovich, Yu. N. Kiselev, I. M. Sapetina, and Ya. V. Sapetin. [CATCHING BIRDS WITH AUTOMATIC DEVICES.] Trudy Oksk. Gos. Zapovednika 4: 402-424. 1962. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 10I149. Transl. of Russian abstr.] WR 120: 63

BIRDS--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Anikin, V. I. [NESTING OF THE BRAMBLING (FRINGILLA MONTIFRINGILLA) IN THE SOUTHERN PART OF GOR'KII OBLAST.] Ornitologiya (Moscow) 6: 463. 1963. [From Biol. Abstr. 46(7), 1965, from Referat. Zhur., Biol., 1964, no. 11I191. In Russian.] WR 120: 63

Belopol'skii, L. O., T. I. Blyumental', I. N. Dobrynina, V. R. Dol'nik, D. S. Lyuleeva, and V. A. Paevskii. [AN ANALYSIS OF THE FACTORS DETERMINING THE DYNAMICS OF MIGRATION IN COURLAND SPIT.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 5-8. 1963. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1964, no. 9I108. In Russian.] WR 120: 63

Blagosklonov, K. N. [EXPERIENCE IN NATURE IN EXPLAINING THE INDIVIDUAL CAPACITIES OF BIRDS IN ORIENTATION, SEARCHING FOR FOOD, AND OVERCOMING OBSTACLES.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 14-16. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 10I154. In Russian.] WR 120: 63

Blyumental', T. I., and V. R. Dol'nik. [A METHOD FOR THE QUANTITATIVE ESTIMATION OF THE MUTUAL EFFECTS OF DIFFERENT SPECIES OF BIRDS AT MIGRATION TIME.] Primenenie Matematicheskikh Metodov v Biologii. Leningradsk. Univ. (Leningrad) 2: 110-117. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 5I116. Transl. of Russian abstr.] WR 120: 63

Bonner, W. Nigel. POLYGYNY AND SUPER-NORMAL CLUTCH SIZE IN THE BROWN SKUA, CATHARACTA SKUA LÖNNBERGI (MATHEWS). Brit. Antarctic Surv. Bull. 3: 41-47, illus. 1964. [From Biol. Abstr. 46(14), 1965.] WR 120: 64
[British Antarctic Surv., London, England.]

Borodulina, T. L. [SPECIFIC FEATURES OF PLUMAGE MICRO-STRUCTURE THAT ARE ASSOCIATED WITH THE FLIGHT OF BIRDS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 22-23. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 10I143. Transl. of Russian abstr.] WR 120: 64

Borror, Donald J. SONGS OF THE THRUSHES (TURDIDAE), WRENS (TROGLODYTIDAE), AND MOCKINGBIRDS (MIMIDAE) OF EASTERN NORTH AMERICA. Ohio J. Sci. 64(3): 195-207, illus. 1964. [From Biol. Abstr. 46(1), 1965.] WR 120: 64
[Ohio State Univ., Columbus.]

Braestrup, F. W. THE FUNCTIONS OF COMMUNAL DISPLAYS. Dansk Ornith. Foren. Tidsskr. 57: 133-142. 1963. [From Ibis 107(4), 1965.] WR 120: 64
Abstract: Examines the functions of communal displays in relation to the theories of Wynne-Edwards which are refuted with respect to the functions of leks and communal roosts. With other types of communal displays, the author thinks they are primarily for tying together discrete groups between which inter-group selection is made possible.

Brower, Lincoln Pierson, and Jane Van Zandt Brower. BIRDS, BUTTERFLIES, AND PLANT POISONS: A STUDY IN ECOLOGICAL CHEMISTRY. Zoologica (NY) 49(3): 137-159. 1964. [From Biol. Abstr. 46(5), 1965.] WR 120: 64
[Oxford Univ., Oxford, England.] Palatability of butterflies tested.

Busse, Przemyslaw, and Maciej Gromadzki. OBSERWACJE PRZELOTU JESIENNEGO PTAKOW W ROKU 1960 W GORKACH WSCHODNICH KOLO GDANSKA. [OBSERVATIONS ON BIRD MIGRATION AT GORDKI WSCHODNIE NEAR GDANSK AUTUMN 1960.] Acta Ornithol. (Warsaw) 7(10): 305-335, illus., maps. 1963. [From Biol. Abstr. 46(5), 1965. In Polish with Russian and English summ.] WR 120: 64
[Zakad Ornitol., Wroclaw, Poland.]

Byrne, L. H. ORNITHOLOGICAL NOTES FROM SOUTHEAST WEXFORD, AUTUMN, 1963. Irish Nat. J. 14(11): 271-274. 1964. [From Biol. Abstr. 46(1), 1965.] WR 120: 64
[11 Rostrevor Terrace, Rathgar, Dublin, Ireland.] Migratory spp. of waders were observed in profusion in Ladies Island Lake, Co. Wexford, while passerine migration was almost nonexistent. Forty-five different genera are listed.

Christensen, N. Hesselbjerg, and N. T. Rosenberg. BOGFINKENS (FRINGILLA COELEBS S.) FORARSTRAEK. [SPRING MIGRATION OF CHAFFINCHES IN DENMARK.] Dansk Ornithol. Foren. Tidsskr. 58(1): 13-35, illus., maps. 1964. [From Biol. Abstr. 46(2), 1965. In Danish with English summ.] WR 120: 64
[Odensevej 18, Himmelev pr. Roskälde, Denmark.]

Davis, L. Irby. ACOUSTIC EVIDENCE OF RELATIONSHIP IN ORTALIS (CRACIDAE). Southwestern Nat. 10(4): 288-301, 29 figs. 15 Nov. 1965. WR 120: 64
[1122 East Polk St., Harlingen, Texas.] Abstract: Song phrases of North American chachalacas are described and discussed. Sound spectrograms indicate that all species have several features in common: the song phrase may be divided into three motifs in which the formant frequency of the first (lowest) formant is between 1000 and 2000 cps.; there are elements of voiced sound which are largely masked by white noise; several phrases are delivered in series as a song period; the phrase varies from 5 to 9 deciseconds in length and the rest between the phrases in a period is less than the length of the phrase. The presence of a "guttural rattle" in the phrase of all Mexican Pacific coast species serves to separate the genus into two subgroups. Fixed, distinctive characters serve to separate the genus into five species. Within the species there are certain individual variations but no regional or subspecific variations were found. O. poliocephala and O. wagleri have some similarities which suggest that they may be sibling species.

Dementiev, G. P., and V. D. Ilichev. [THE VOICE OF BIRDS, AND SOME PROBLEMS OF STUDYING IT.] Ornitologia 6: 401-407. 1963. [From Ibis 107(4), 1965. In Russian.] WR 120: 65

Dick, James A., and James D. Rising. A COMPARISON OF FOODS EATEN BY EASTERN KINGBIRDS AND WESTERN KINGBIRDS IN KANSAS. Kans. Ornithol. Soc. Bull. 16(4): 23-24. Dec. 1965. WR 120: 65
[Univ. Kans., Lawrence.]

Dol'nik, V. R. [THE MECHANISM OF PHOTOPERIODICAL REGULATION OF THE ENDOGENOUS RHYTHM OF SEXUAL CYCLES IN BIRDS.] Zool. Zhur. 43(5): 720-734, illus. 1964. [From Biol. Abstr. 46(8), 1965. In Russian with English summ.] WR 120: 65

Dorofeev, A. M., and A. P. Krapivnyi. [THE SPECIES COMPOSITION AND NATURE OF INTERRELATIONSHIPS BETWEEN FLOCKS IN SOME MIGRATING SPECIES OF BIRDS IN THE AUTUMN-WINTER PERIOD.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 67-69. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 7I152.- In Russian.] WR 120: 65

Eastwood, E., and G. C. Rider. SOME RADAR MEASUREMENTS OF THE ALTITUDE OF BIRD FLIGHT. British Birds 58(10): 393-426, 18 figs. + 4 pls. Oct. 1965. WR 120: 65

Summary: (1) The altitude distribution of migrants over the southern North Sea was measured by radar over the period June 1962-April 1963. The results are presented in a series of monthly histograms; day and night distributions are shown separately. (2) The median altitude derived from the night observations is 2,000 feet; the corresponding result from the daytime measurements is 1,800 feet. In other words, migrants fly significantly higher by night than by day. (3) The median altitudes for the spring migration (February, March and April) are 2,000 feet (night) and 1,700 feet (day). The westerly immigration of the autumn (October and November) shows median altitudes of 1,900 feet (night) and 1,600 feet (day). (4) There is a tendency for higher mean altitudes to be flown in the presence of widespread overcast than under clear skies. The height distribution may be continuous through the cloud layer. (5) A correlation has been looked for between wind direction and the median altitude. The spring results show no correlation, the autumn figures suggest only a slight tendency for marginally lower altitudes to be assumed in the face of head winds. No correlation has been found between wind speed and altitude. (6) Analysis of the oversea and overland altitudes measured on the same migratory movement suggests identical heights up to 1,200 feet, but the altitude curves diverge thereafter, with the 'land' curve climbing above the 'sea' curve. (7) The presence of a freezing level in the atmosphere may impose a ceiling upon the altitude distribution. (8) The effect of altitude distribution upon the apparent density of migration as measured from the p.p.i. is discussed. It is shown that the apparent extent of a migration is affected by the altitude distribution, but the relationship is not a sensitive one. Some examples are given of the estimation of the heights of extended bird movements by the use of the radar cover diagram. (9) Certain results in this paper appear to suggest the possibility that a migrant bird may 'select' its altitude and air speed as a result of a servo-type equilibrium between its metabolic processes and the temperature and humidity of the ambient air.

Emlen, John T., and John A. Wiens. THE DICKCISSEL INVASION OF 1964 IN SOUTHERN WISCONSIN. Passenger Pigeon 27(2): 51-59, 4 figs. Summer 1965. WR 120: 65
[Univ. Wis., Madison.] Roadside surveys of farmland birds revealed a mass invasion of dickcissels into southern Wisconsin in the spring of 1964. The increase over 1963 was of the order of 50 fold in the south central counties and raised the status of the species from decidedly uncommon to the top or next to top position of abundance, well ahead of the ubiquitous western meadowlark. The birds were most numerous around alfalfa and clover fields but were encountered in all types of farmland.--From summ.



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Esilevskaya, M. A. [THE STRUCTURE OF THE MOUTH APPARATUS OF SOME PALEARCTIC LARKS AS RELATED TO SPECIFIC CHARACTERISTICS OF THEIR FEEDING.] Uch. Zap. Khar'kovskogo Univ. No. 130 Trudy Nauch.-Issled. Inst. Biol., Biol. Fak. 32: 126-142. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 2I136. Transl. of Russian abstr.] WR 120: 66

Ezerskas, L. I. [MORPHOLOGICAL CHARACTERISTICS OF THE BIG CLUTCHES OF BIRDS THAT NEST IN HOLLOWS IN LITHUANIAN SSR.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 69-71. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 10I150. Transl. of Russian abstr.] WR 120: 66

Data are given on the egg sizes on the basis of studies of about 900 clutches of the starling (Sturnus vulgaris), the great tit (Parus major), the green tit, and the pied flycatcher (Muscicapa hypoleuca Pall.). There are data on the number of eggs in a clutch.

Ferdinand, L., and N. Hesselbjerg Christensen. OVERSIGT OVER FORARS-TRAEKOBSERVATIONER 1957--1962 ORGANISERET AF DANSK ORNITHOLOGISK FORENING ("PASKELEJRE"). [SURVEY OF OBSERVATIONS ON SPRING MIGRATION, 1957-1962, ORGANIZED BY DANSK ORNITHOLOGISK FORENING (DANISH ORNITHOLOGICAL SOCIETY) ("EASTER CAMPS").] Dansk Ornithol. Foren. Tidsskr. 58(1): 1-12, map. 1964. [From Biol. Abstr. 46(2), 1965. In Danish with English summ.] WR 120: 66

Galushin, V. M., E. A. Likhopek, F. N. Logunova, and N. A. Rubinshtein. [GREAT SPOTTED WOODPECKERS (DENDROCOPUS MAJOR) THAT ARE CAUGHT BY PEREGRINE FALCONS (FALCO PEREGRINUS) ON YAMAL PENINSULA.] Uch. Zap. Krasnoyarskii Gos. Pedagog. Inst. 24(5): 76-84. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 11I206. Transl. of Russian abstr.] WR 120: 66

Gray, Philip Howard. A CHECKLIST OF PAPERS SINCE 1951 DEALING WITH IMPRINTING IN BIRDS. Psychol. Rec. 13(4): 445-454. 1963. [From Biol. Abstr. 46(4), 1965.] WR 120: 66

[Mont. State Coll., Bozeman.] A checklist of all known papers, abstracts, and letters since 1951 dealing wholly or substantially with imprinting in birds. More than 40 persons who have published in the area of imprinting were personally contacted (a) to verify their listings in the checklist, and (b) to ascertain if tkey had more items in print or in press. The checklist may be used as a main reference source in situations where space is limited.

Gruys-Casimir, E. M. ON THE INFLUENCE OF ENVIRONMENTAL FACTORS ON THE AUTUMN MIGRATION OF CHAFFINCHES AND STARLINGS: A FIELD STUDY. Arch. Neérl. Zool. 16: 175-279. 1965. [From Ibis 107(4), 1965.] WR 120: 66

Hailman, J. P. BREEDING SYNCHRONY IN THE EQUATORIAL SWALLOW-TAILED GULL. Am. Nat. 98: 79-83. 1964. [From Ibis 107(4), 1965.] WR 120: 66

Harrison, T. REMARKS (FEEDING, BREEDING, ECOLOGY) ON THE BIRDS OF MT. KINABALU (BORNEO). Proc. Roy. Soc. Ser. B. Biol. Sci. 161(982): 80-82. 1964. [From Biol. Abstr. 46(8), 1965.] WR 120: 66

Hartshorne, J. M. THE DEVELOPMENT OF THE EASTERN BLUEBIRD'S VOCAL REPERTOIRE. Biol. Prototypes Synthetic Systems 1: 49. 1962. [From Biol. Abstr. 46(4), 1965.] WR 120: 66

[Cornell Univ., Ithaca, N. Y.] Abstract only.

Haverschmidt, F. THE UTILISATION OF MANGROVES BY SOUTH AMERICAN BIRDS. Ibis 107(4): 540-542. Oct. 1965. WR 120: 66

[Paramaribo, Surinam.]

Inozemtsev, A. A. [FEEDING AND OTHER ECOLOGICAL CHARACTERISTICS OF THE KINGLET (REGULUS REGULUS REGULUS L.) AND WREN (TROGLODYTES TROGLODYTES TROGLODYTES L.) IN THE MOSCOW OBLAST.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(3): 64-72, illus. 1964. [From Biol. Abstr. 46(7), 1965. In Russian.] WR 120: 67

Inozemtsev, A. A. [SOME CAUSES AND REGULAR PATTERNS OF BODY WEIGHT FLUCTUATIONS IN BIRDS.] Zool. Zhur. 43(2): 232-241, illus. 1964. [From Biol. Abstr. 46(4), 1965. In Russian with English summ.] WR 120: 67

Ivanter, E. V., N. V. Vinogradova, and M. E. Shumakov. [BIRD MIGRATION IN KARELIA IN THE FALL OF 1961.] Soobshch. Pribaltiiskoi Kom. Izuch. Migratsii Ptits. Akad. Nauk Est. SSR 2: 59-66. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 4I198. Transl. of Russian abstr. Original with English summ.] WR 120: 67

Kanai, Ikuo. [MEASUREMENT ANALYSIS OF SWALLOW'S NEST.] Misc. Rept. Yamashina's Inst. Ornithol. Zool. 4(1): 31-41. 1964. [From Biol. Abstr. 46 (8), 1965. In Japanese with English summ.] WR 120: 67
[Yamashina's Inst. Ornithol. Zool., Tokyo, Japan.]

Klaver, A. WAARNEMINGEN OVER DE BIOLOGIE VAN DE DRAAIHALS (JYNX TORQUILLA L.). [OBSERVATIONS ON THE BIOLOGY OF THE WRYNECK (JYNX TORQUILLA L.).] Limosa 37: 221-232. 1964. [From Ibis 107(4), 1965. In Dutch.] WR 120: 67

Kokhanov, V. D. [THE SPRING MIGRATIONS OF BIRDS IN THE AREA OF THE AINOVYE ISLANDS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 95-97. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 4I197. In Russian.] WR 120: 67

Krivosheev, V. G. [THE MIGRATIONS OF BIRDS AND HUNTING THEM DURING OVERFLIGHTS IN THE KOLYMA VALLEY.] In: (Problems of conservation in Yakutiya.) (Yakutsk). p. 113-129. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 4I217. Transl. of Russian abstr.] WR 120: 67

Larionov, G. P. [THE MIGRATION OF AQUATIC BIRDS AND THEIR CONSERVATION IN THE ENVIRONS OF THE CITY OF YAKUTSK.] In: (Problems of conservation in Yakutiya.) (Yakutsk). p. 131-134. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 4I218. Transl. of Russian abstr.] WR 120: 67

Lind, E. A. ZUM SCHWARMVERHALTEN DER MEHLSCHWALBE, DELICHON U. URBICA (L.). [ON THE FLOCKING BEHAVIOR OF THE HOUSE MARTIN, DELICHON U. URBICA (L.).] Ann. Zool. Soc. Zool. Bot. Fenn. "Vanamo" 25(4): 1-71, illus., map. 1963. [From Biol. Abstr. 46(11), 1965. In German with English and French summ.] WR 120: 67

Lind, H. [NOTES ON SOCIAL BEHAVIOUR IN TERNS.] Dansk Ornith. Foren. Tidsskr. 57: 155-175. 1963. [From Ibis 107(4), 1965. In Danish with English summ.] WR 120: 67
Abstract: Discusses at some length the social behavior of Sterna sandvicensis, S. nilotica, S. paradisaea and S. hirundo.

Long, J. L., and T. J. Tozer. MIGRATORY MOVEMENTS OF EMUS AND CONTROL EFFORTS. West. Austral. Dept. Agr. J. (ser. 4) 5(12): 973-976. Dec. 1964. [From Bibliog. Agr. 29(6), 1965.] WR 120: 67
"Pest of grain crops."

Matyushkin, E. N. [TOWARD A QUANTITATIVE CHARACTERIZATION OF THE TERRITORIAL DISTRIBUTION OF BIRDS IN THE TEBERDA PRESERVE.] Trudy Teberdinsk. Gos. Zapovednika 4: 131-166. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 24I146. Transl. of Russian abstr.] WR 120: 67

Mester, Horst. FEEDING HABITS OF THE GREAT GREY SHRIKE IN WINTER. British Birds 58(9): 375-383, 2 figs. Sept. 1965. WR 120: 68

Meyer, Merle E. DISCRIMINATIVE BASIS FOR ASTRONAVIGATION IN BIRDS. J. Comp. Physiol. Psychol. 58(3): 403-406, illus. 1964. [From Biol. Abstr. 46 (10), 1965.] WR 120: 68
Matthews has suggested that birds use sun navigation to obtain their orientation. He hypothesized that the bird assesses the sun's arc and uses the altitude of the highest point to obtain its latitude, and changes in the arc angle (together with a sense of time), to estimate its longitude. This study investigated birds' ability to discriminate these dimensions and concluded that homing pigeons are able to detect movement at 15° an hour, and can discriminate changes in altitude and changes in arc angle. The level of discriminated changes of altitude and arc angle would not support pinpoint navigation, but the study provides data compatible with Matthews' theory.

Molodovskii, A. V. [THE MIGRATION OF SHORE AND AQUATIC NON-GAME BIRDS ON THE SOUTHERN MANGYSHLAK PENINSULA.] Uch. Zap. Gor'kovskogo Univ. 63: 19-21. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 9I109. Transl. of Russian abstr.] WR 120: 68

Moss, Robert. DIURNAL RHYTHMS OF FULMARS FULMARUS GLACIALIS IN THE ARCTIC AUTUMN. Ibis 107(4): 533-535, 2 figs. Oct. 1965. WR 120: 68
[Marischal Coll., Aberdeen, Scotland.]

Nelson, J. B. AGGRESSION IN THE GANNET SULA BASSANA. Biol. J. 3: 1-8. 1963. [From Ibis 107(4), 1965.] WR 120: 68

Norup, S. [BREEDING BIOLOGY OF DANISH PIPITS. 1. TAWNY PIPIT (ANTHUS CAMPESTRIS L.).] Dansk Ornith. Foren. Tidsskr. 57: 110-117. 1963. [From Ibis 107(4), 1965. In Danish with English summ.] WR 120: 68

Noskov, G. A. [EFFECT OF SOME EXTERNAL FACTORS ON MIGRATORY FLIGHT OF LAND BIRDS.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 120-121. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 11I173. Transl. of Russian abstr.] WR 120: 68

Packard, Gary C. PHYSIOLOGIC HOMEOSTATIS OF BIRDS. Kans. Ornithol. Soc. Bull. 16(4): 21-23. Dec. 1965. WR 120: 68
[Univ. Kans., Lawrence.]

Patterson, I. J. TIMING AND SPACING OF BROODS IN THE BLACK-HEADED GULL LARUS RIDIBUNDUS. Ibis 107(4): 433-459, 10 figs. Oct. 1965. WR 120: 68
[Culterty Field Sta., Newburgh, Aberdeenshire, England.] It was found that pairs nesting just outside the colony had a much lower breeding success than those nesting in the colony and that nests on the colony fringe had a slightly lower success than those in the center. Pairs laying during the peak laying period had a higher breeding success than pairs laying either earlier or later in the season. Since by far the most important mortality agent was predation, it seems likely that both clustering and synchronization of nesting function as anti-predator systems and arguments in favor of this are discussed.--From summ.

Pavlov, Z. I. [ECOLOGICAL ANALYSIS OF THE BIRD FAUNA OF THE CRIMEAN YALLAS.] In: (Collection of postgraduate papers.) L'vovsk. Univ. (L'vov). p. 87-91. 1963. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 23I125. Transl. of Russian abstr.] WR 120: 68

Pertsov, N. A. [SOME DATA ON THE DIET OF BIRDS LIVING ON THE ISLANDS OF THE NORTHERN ARCHIPELAGO OF THE KANDALAKSHA PRESERVE.] Trudy Kandalakshakogo Gos. Zapovednika 4: 29-34. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 2I158. Transl. of Russian abstr. Original with English summ.] WR 120: 68

Puzanov, I. I., and L. F. Nazarenko. [ON THE HISTORY OF THE STUDY OF BIRD MIGRATIONS ON THE BLACK SEA AND THE AREA NORTH OF IT.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 163-165. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 4I206. In Russian.] WR 120: 69

Radu, Dimitrie. ORIGINEA GEOGRAFICA SI DINAMICA FENOLOGICĂ A PĂSĂRILOR DIN R.P.R. [THE GEOGRAPHICAL ORIGIN AND PHENOLOGICAL DYNAMICS OF THE BIRDS OF THE RUMANIAN PEOPLE'S REPUBLIC.] In: (Probleme de Biologie.) Editura Acad. Republicii Populare Romne (Bucharest). p. 513-574, illus., map. 1962. [From Biol. Abstr. 46(4), 1965. In Romanian with Russian and French summ.] WR 120: 69

An analysis of 326 spp.

Rucner, Dragutin. PONASANJE PTICA ZA VRIJEME POMRCINE SUNCA. [THE BEHAVIOR OF BIRDS DURING AN ECLIPSE OF THE SUN.] Larus 14: 183. 1960. [From Biol. Abstr. 46(2), 1965. In Serbo-Croatian with German summ.] WR 120: 69

Sokolov, V. E. [THE WATERING OF SOME DESERT BIRDS.] Ornitologiya (Moscow) 6: 482-483. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 12I199. In Russian.] WR 120: 69

Spuris, Z. D. [BIRD BANDING IN THE LATVIAN SSR DURING 1950 THROUGH 1960.] Trudy Inst. Biol. Akad. Nauk Latviisk SSR 22: 5-21. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 12I114. Transl. of Russian abstr. Original with Russian and English summ.] WR 120: 69

Tadic, Ante. POMRCINA SUNCA I PTICJI SVIJET. [ECLIPSE OF THE SUN AND THE BIRD WORLD.] Larus 14: 180-182. 1960. [From Biol. Abstr. 46(2), 1965. In Serbo-Croatian with German summ.] WR 120: 69

Thielcke, Gerhard. LAUTAUBERUNGEN DER VOGEL IN IHRER BEDEUTUNG FUR DIE TAXONOMIE. [AUDIBLE EXPRESSIONS OF BIRDS. THEIR MEANING FOR TAXONOMY.] J. Ornithol. 105(1): 78-84. 1964. [From Biol. Abstr. 46(10), 1965. In German.] WR 120: 69

Thorpe, W. H., and Myles E. W. North. ORIGIN AND SIGNIFICANCE OF THE POWER OF VOCAL IMITATION: WITH SPECIAL REFERENCE TO THE ANTIPHONAL SINGING OF BIRDS. Nature 208(5007): 219-222, 10 figs. 16 Oct. 1965. WR 120: 69

[Univ. Cambridge, Cambridge, England.]

Titarenko, T. S. [PRELIMINARY DATA ON THE APPLICABILITY OF THE METHOD OF THE PRECIPITATION REACTION FOR ANALYZING THE POPULATION COMPOSITION OF BIRDS.] In: (Summaries of reports from the 5th Baltic Ornithological Conference.) (Tartu). p. 194-196. 1963. [From Biol. Abstr. 46(7), 1965, from Referat. Zhur., Biol., 1964, no. 11I139. Transl. of Russian abstr.] WR 120: 69

Comparisons were made of the protein composition of the blood serum of starlings from 4 points (the settlement of Rybachii, Lakes Engure, Pukhtu, and Kivach). There are noticeable differences in protein composition of the blood serum in the birds of the different geographical groups: in specimens from the same group the blood serum protein composition is homogeneous (there are no sex and age differences).

Uspenskii, S. M. [THE "WARMING" OF THE ARCTIC AND THE BIRD FAUNA OF HIGH LATITUDES.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 196-198. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 5I143. In Russian.] WR 120: 69

Vaitkyavichyus, A. P. [THE RESULTS OF VISUAL OBSERVATIONS OF BIRD MIGRATION IN THE AREA OF THE GULF OF KURLAND IN 1962.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 23-26. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 4I202. In Russian.] WR 120: 69

Vaitkyavichyus, A. P. [SOME FEATURES OF THE MIGRATION OF BIRDS IN THE AREA OF THE COURLAND LAGOON FROM 1954 TO 1962.] Trudy Akad. Nauk Lit. SSR B3(32): 195-208. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 9I107. Transl. of Russian abstr.] WR 120: 70

Veroman, Kh. [THE FALL MIGRATIONS OF BIRDS IN THE AREA OF CHUDSKOE LAKE IN 1961.] Soobshch. Pribaltiiskoi Kom. Izuch. Migratsii Ptits. Akad. Nauk Est. SSR 2: 33-42. 1963. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1964, no. 4I199. Transl. of Russian abstr. Original with English summ.] WR 120: 70

Veroman, Kh. G. [MIGRATIONS AND INVASIONS OF TITS IN THE BALTIC AREA BETWEEN 1954 AND 1962.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 30. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 4I208. In Russian.] WR 120: 70

Zaletaev, V. S. [SEASONAL MIGRATION OF BIRDS ALONG THE BANKS AND IN THE BARRENS OF MANYSHLAK AND ON THE BAZACHI PENINSULA.] Migratsii Zhivotnykh. Akad. Nauk SSSR (Moscow) 3: 106-117. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I211. Transl. of Russian abstr.] WR 120: 70

Date, duration and intensity of the spring and fall migrations are given for the ducks and predatory birds.

Zaletalev, V. S. [DATA ON THE BIOLOGY OF FISH-EATING BIRDS OF THE EASTERN AND NORTH-EASTERN CASPIA.] Okhrana Prirody & Ozelenenie (Moscow) 4: 11-14. 1960. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 4I156. Transl. of Russian abstr.] WR 120: 70

Zimmerman, John L. BIOENERGETICS OF THE DICKCISSEL, SPIZA AMERICANA. Physiol. Zoöl. 38(4): 370-389, 8 figs. Oct. 1965. WR 120: 70
[Kans. State Univ., Manhattan.]

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Ben'kovskii, L. M. [INDIVIDUAL BIRD STUDIES IN SOUTHERN SAKHALIN ISLAND.] Ornitologiya (Moscow) 6: 465-466. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 11I204. Transl. of Russian abstr.] WR 120: 70

Brooke, R. K., and K. E. Cackett. PRELIMINARY LIST OF THE BIRDS OF THE CENTRAL SABI VALLEY, RHODESIA. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 31. 34 p. 1965. 30¢. WR 120: 70
List annotated as to status, frequency, habitat preferance and recorded breeding.

Drozdov, N. N. [A CHARACTERIZATION OF THE BIRD POPULATIONS OF DIFFERENT TOPOGRAPHIC AREAS OF AZERBAIDZHAN.] In: (Zoogeography of the land.) (Tashkent). p. 89-90. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 4I163. In Russian.] WR 120: 70

Dyrcz, Andrzej. BADANIA POROWNAWCZE NAD AWIFAUNA SRODOWISK: LESNEGO I PARKOWEGO. [COMPARATIVE STUDIES ON THE AVIFAUNA OF WOODS AND PARKS.] Acta Ornithol. (Warsaw) 7(11): 337-385, illus. 1963. [From Biol. Abstr. 46(13), 1965. In Polish.] WR 120: 70

Erz, Wolfgang. POPULATIONSOEKOLOGISCHE UNTERSUCHUNGEN AN DER AVIFAUNA ZWEIER NORDWESTDEUTSCHER GROSSTAEDTE, UNTER BESONDERER BERUECKSICHTIGUNG DER POPULATIONSDYNAMISCHEN VERHAELTNISSE BEI DER AMSEL, TURDUS MERULA MERULA L. [POPULATION ECOLOGY STUDIES ON THE AVIFAUNA OF TWO NORTHWEST GERMAN CITIES (WITH SPECIAL CONSIDERATION FOR POPULATION-DYNAMIC RELATIONSHIPS IN THE BLACKBIRD, TURDUS MERULA MERULA).] Z. Wissenschaftliche Zool. 170(1/2): 1-111, illus. 1964. [From Biol. Abstr. 46(14), 1965. In German.] WR 120: 70
[Inst. Haustierk., Christ. Albrechts Univ., Kiel, West Germany.]

Ganya, I. M. [ECOLOGICAL CLASSIFICATION OF ORCHARD BIRDS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 40-42. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 6I224. In Russian.] WR 120: 71

Jones, E. Morse. THE BIRDS OF SALT VLEI, BATHURST DIVISION, C[APE] P[ROVINCE]. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 28. 34 p. 1965. 40¢. WR 120: 71

Khokhlova, N. A. [A STUDY OF THE BIRDS AT THE GOR'KII RESERVOIR.] Uch. Zap. Gor'kovskogo Univ. 63: 3-5. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 11I190. Transl. of Russian abstr.] WR 120: 71
After the reservoir was built the nesting gulls and terns disappeared: only the black grouse, the common partridge (Perdix perdix), and the quail remained. There was a decrease in the number of ducks at this nesting place, and there was an increase in the number of species of nesting sandpipers (the Terek sandpiper: Terekia cinerea began to nest). Nesting shifted to a later period.

Kozhevnikova, R. K. [THE STRUCTURE OF THE BIRD POPULATION OF SPRUCE GROVES IN THE BEREZINA STATE NATIONAL FOREST.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 86-88. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 10I156. In Russian.] WR 120: 71

Leopold, N. F. CHECKLIST OF BIRDS OF PUERTO RICO AND THE VIRGIN ISLANDS. P. R. (Rio Piedras) Agr. Expt. Sta. B. 168. 119 p. Aug. 1963. [From Bibliog. Agr. 28(8), 1964.] WR 120: 71

Novatti, R. DISTRIBUCIÓN PELÁGICA DE AVES EN EL MAR DE WEDDELL. [OCEANIC DISTRIBUTION OF BIRDS IN WEDDELL'S SEA.] Contrib. Inst. Antartico Argent. (Buenos Aires) 67: 3-22, maps. 1962. [From Biol. Abstr. 46(13), 1965. In Spanish with English, French, German, and Italian summ.] WR 120: 71
[Inst. Antartico Argentina, Buenos Aires, Argentina.]

Okorokov, V. I. [PASSERINE BIRDS OF CHELYABINSK OBLAST AND SOME QUESTIONS OF THEIR PRACTICAL VALUE.] In: (A collection of articles on regional studies and geographical history.) (Chelyabinsk). p. 230-238. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 10I159. Transl. of Russian abstr.] WR 120: 71
Information is given on 112 spp.

Poslavskii, A. N. [NEW DATA ON THE BIRD FAUNA OF THE AREA NORTH OF THE CASPIAN.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR 20: 194-201. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 4I157. Transl. of Russian abstr.] WR 120: 71

Rotzien, Charles L. A CUMULATIVE REPORT ON WINTER BIRD POPULATION STUDIES IN EIGHT DECIDUOUS SHELTERBELTS OF THE RED RIVER VALLEY, NORTH DAKOTA. Proc. N. Dak. Acad. Sci. 17: 19-23, illus., map. 1963. [From Biol. Abstr. 46(3), 1965.] WR 120: 71
[N. Dak. State Univ., Fargo.]

Salikhbaev, Kh. S., and M. M. Ostapenko. [THE EFFECT OF HUMAN ECONOMIC ACTIVITY ON THE BIRD FAUNA OF THE SURKHAN BASIN.] In: (Zoogeography of the land.) (Tashkent). p. 266-267. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 4I166. In Russian.] WR 120: 71

Siebert, R. [ON PROBLEMS OF BIRD SETTLEMENT IN FOREST.] Sozialistische Forstwirtsch. 14(6): 188-190. June 1964. [From Bibliog. Agr. 29(3), 1965. In German.] WR 120: 71

Skead, C. J. BIRDS OF THE ALBANY (GRAHAMSTOWN) DISTRICT. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 30. 46 p. 1965. 75¢. WR 120: 72
Annotated list of 362 spp.

Smith, K. D. ON THE BIRDS OF MOROCCO. Ibis 107(4): 493-526, 1 fig. Oct. 1965. WR 120: 72
[18 Stanhope Rd., Weston-Super-Mare, Somerset, England.] Following accounts of the climate and topography of the area and autumn migration in western Morocco, there is a systematic annotated list of 246 spp.

Winterbottom, J. M. LIST OF THE BIRDS OF ROBERTSON DISTRICT. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 29. 19 p. 1965. 25¢. WR 120: 72

Yepez Tamayo, Gerardo. ORNITOLOGIÁ DE LAS ISLAS MARGARITA, COCHE Y CUBAGUQ (VENEZUELA). [ORNITHOLOGY OF THE ISLANDS OF MARGARITA, COCHE AND CUBAGUQ (VENEZUELA).] Soc. Cienc. Nat. La Salle Mem. 23(65): 75-112, maps. 1963. [From Biol. Abstr. 46(7), 1965. In Spanish.] WR 120: 72

BIRDS--POPULATIONS & FLUCTUATIONS

Davis, Peter. RECOVERIES OF SWALLOWS RINGED IN BRITAIN AND IRELAND. Bird Study 12(3): 151-169, 5 figs. Sept. 1965. WR 120: 72
[British Trust for Ornithology, Tring, Hertfordshire, England.]

Delius, Juan D. A POPULATION STUDY OF SKYLARKS ALAUDA ARVENSIS. Ibis 107 (4): 466-492, 19 figs. Oct. 1965. WR 120: 72
[Univ. Museum, Parks Rd., Oxford, England.]

Filonov, K. P. [DATA FROM A STUDY OF THE WINTERING BIRD POPULATION IN THE BASKIRS NATIONAL PRESERVE.] Trudy Bashkirsk. Gos. Zapovednika 2: 127-143. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 7I168. Transl. of Russian abstr.] WR 120: 72

Gibet, L. A. [REGIONAL VARIATION IN THE POPULATION DYNAMICS OF PREDATORY BIRDS AS ILLUSTRATED BY THE WEST SIBERIAN FOREST STEPPE.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(6): 42-49. 1963. [From Biol. Abstr. 46(4), 1965. In Russian.] WR 120: 72

Hamilton, T. H., R. H. Barth, Jr., and I. Rubinoff. THE ENVIRONMENTAL CONTROL OF INSULAR VARIATION IN BIRD SPECIES ABUNDANCE. Proc. Nat. Acad. Sci. USA 52(1): 132-140, illus. 1964. [From Biol. Abstr. 46(11), 1965.] WR 120: 72
[Univ. Texas, Austin.]

Isakov, Yu. A. [COUNTING AND FORECASTING THE POPULATION SIZES OF AQUATIC BIRDS.] In: (The organization and counting methods for birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 36-82, maps. 1963. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1964, no. 8I112. Transl. of Russian abstr.] WR 120: 72

Kumari, E. [NUMBER DYNAMICS OF SOME MIGRATORY SEABIRDS ON THE WHITE SEA AND IN THE EASTERN PART OF THE BALTIC SEA.] Soobshch. Pribaltiiskoi Kom. Izuch. Migratsii Ptits. Akad. Nauk Est. SSR 2: 67-80. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1964, no. 2I172. Transl. of Russian abstr. Original with Russian summ.] WR 120: 72

Perrins, C. M. POPULATION FLUCTUATIONS AND CLUTCH-SIZE IN THE GREAT TIT, PARUS MAJOR L. J. Animal Ecol. 34(3): 601-647, 12 figs. Oct. 1965. WR 120: 72
[Edward Grey Inst., Oxford, England.]

Tashliev, A. O., and A. N. Sukhinin. [SOME CHANGES IN THE BIRD FAUNA OF THE IMMEDIATE AREA OF THE KARAKUM CANAL.] In: (Natural conditions, animal husbandry, and the food supply of deserts,) Akad. Nauk Turkm. SSR (Ashkhabad). p. 151-161. 1963. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1964, no. 4I158. Transl. of Russian abstr.] WR 120: 73

BIRDS--ECONOMICS, CONTROL, MORTALITY

Doran, Garry. EFFECT OF WINTER 1962-1963 UPON BIRD LIFE IN IRELAND. Irish Nat. J. 14(11): 278-279. 1964. [From Biol. Abstr. 46(5), 1965.] WR 120: 73
[Garden Flat, 64 Pembroke Road, Dublin, Ireland.]

Dorward, R. E. NURSERY BIRD-CONTROL THROUGH COVER CROPS. Tree Planters' Notes 70: 12. Mar. 1965. [From Bibliog Agr. 29(10), 1965.] WR 120: 73
"Soybeans and sorghum plantings in Tennessee to protect forest seeds."

Golovanova, E. N., and V. G. Stativkin. [EXPERIMENTS IN CONTROLLING SPARROWS IN TADZHIKISTAN.] Zashchita Rast. ot Vreditelei Boleznei 10: 25. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., no. 13I204. Transl. of Russian abstr.] WR 120: 73

Goodhue, Lyle D., and F. M. Baumgartner. APPLICATIONS OF NEW BIRD CONTROL CHEMICALS. J. Wildl. Mgmt. 29(4): 830-837. Oct. 1965. WR 120: 73
[Phillips Petroleum Co., Bartlesville, Okla.] Abstract: A new approach for the control of nuisance and depredatory birds is offered by the use of chemically treated baits which produce flock-disturbing reactions. Physiological effects involving unusual actions and calls disturb and warn unaffected birds of impending danger, thus inducing them to abandon the area. The two most effective chemicals found so far are 4-nitropyridine-N-oxide (Avitrol[2] 100) and 4-aminopyridine (Avitrol 200). These chemicals are toxic when ingested in sufficient amounts, but the mortality can be controlled by adjusting the concentration in the bait. One highly desirable feature is the lack of secondary poisoning by these chemicals. Excellent results have been obtained on sparrows (Passer domesticus), pigeons around buildings, and starlings (Sturnus vulgaris) in feedlots. Good preliminary results have been obtained in tests against birds in standing grain but research is continuing in this area. Gulls on airports have responded to this method, and crows (Corvus brachyrhynchos) have been driven from the environs of an airport in a single test. Where treated baits can be left in suitable feeders, control of pigeons and sparrows has been effective for more than a year.

Macdonald, J. W. MORTALITY IN WILD BIRDS. Bird Study 12(3): 181-195. Sept. 1965. WR 120: 73
[Min. Agr., Fisheries & Food, Lasswade, Midlothian, Scotland.] Summary: During 1962, 191 individuals representing 67 species were examined. Poisoning 19 per cent, adverse environmental factors 30 per cent, injury 19 per cent, parasitism 11 per cent and infection 19 per cent were the main causes of death and are discussed under these headings. The remaining 2 per cent were decomposed and not suitable for examination. The majority of the birds were weighed and were tabulated according to their sex, age and bodily condition.

Scarratt, J. B. CROSSBILL DAMAGE TO SITKA SPRUCE CONES. Coedwigwr 4(4): 142-145. 1963/64. [From Bibliog. Agr. 29(6), 1965.] WR 120: 73

Shigo, A. L. SAPSUCKER INJURY TO FOREST TREES. Forest Notes 82: 3-6. Summer 1964. [From Bibliog. Agr. 28(9), 1964.] WR 120: 73

Stark, D. A. GROSBEAK INJURY TO WHITE PINE (PINUS STROBUS L.). Maine Forest Serv. B. 21. 20 p. 1964. [From Bibliog. Agr. 28(9), 1964.] WR 120: 73

Threlfall, W. FACTORS CONCERNED IN THE MORTALITY OF SOME BIRDS WHICH PERISHED IN ANGLESEY AND NORTHERN CAERNARVONSHIRE DURING THE WINTER OF 1963, WITH SPECIAL REFERENCE TO PARASITISM BY HELMINTHS. Ann. Mag. Nat. Hist. 6(72): 721-737, illus. 1963 (1964). [From Biol. Abstr. 46(9), 1965.] WR 120: 74
[Dept. Agr. & Forest Zool., Univ. Coll., Bangor, Wales.]

Vlcek, J. [THE CROSSBILL--A NUISANCE IN FOREST SEED WORK.] Les (Bratislava) 19(1): 10-11. Jan. 1963. [From Bibliog. Agr. 28(1), 1964. In Czech.] WR 120: 74

Wall, Marvin L., and Willard H. Whitcomb. THE EFFECT OF BIRD PREDATORS ON WINTER SURVIVAL OF THE SOUTHERN AND EUROPEAN CORN BORERS IN ARKANSAS. J. Kans. Entomol. Soc. 37(3): 187-192, illus. 1964. [From Biol. Abstr. 46(3), 1965.] WR 120: 74
[Univ. Ark., Fayetteville.] Birds are valuable predators of both the southern and European corn borer larvae. The most important predator in southwestern Arkansas is the flicker and the most important predator on the European corn borer is the downy woodpecker. Meadowlarks, mourning doves, and crows were not observed. The results of the destruction of larvae are given.

BIRDS--PARASITES AND DISEASES

Ernek, E., and M. Lichard. ROLE OF THE ENGLISH SPARROW (PASSER DOMESTICUS) IN THE CIRCULATION OF TICK-BORNE ENCEPHALITIS VIRUS. J. Hyg. Epidemiol. Microbiol. Immunol. 8(3): 375-379. 1964. [From Biol. Abstr. 46(6), 1965. In English with French, German, and Spanish summ.] WR 120: 74
[Inst. Virol., Czech. Acad. Sci., Bratislava, Czechoslovakia.]

Harris, M. P. PUFFINOSIS AMONG MANX SHEARWATERS ON SKOKHOLM. British Birds 58(10): 426-434, 3 figs. Oct. 1965. WR 120: 74
[Edward Grey Inst., Oxford, England.] With an appendix entitled: Histological examination of Manx shearwater feet, by G. H. Green.

Nuorteva, Pekka, and Harry Hoogstraal. THE INCIDENCE OF TICKS (IXODOIDEA, IXODIDAE) ON MIGRATORY BIRDS ARRIVING IN FINLAND DURING THE SPRING OF 1962. Ann. Med. Exp. Biol. Fenniae 41(4): 457-468. 1963. [From Biol. Abstr. 46(5), 1965.] WR 120: 74
[Bur. Med. & Surg., Navy Dept., Washington, D. C.]

Sidwell, Robert W., David L. Lundgren, and Bert D. Thorpe. PSITTACOSIS COMPLEMENT-FIXING ANTIBODIES IN SERA FROM FAUNA OF THE GREAT SALT LAKE DESERT OF UTAH. Am. J. Trop. Med. Hyg. 13(4): 591-594. 1964. [From Biol. Abstr. 46 (2), 1965.] WR 120: 74
[S. Res. Inst., Birmingham, Ala.]

Threlfall, W. HELMINTH PARASITES AND POSSIBLE CAUSES OF DEATH OF SOME BIRDS. Ibis 107(4): 545-548. Oct. 1965. WR 120: 74
[Memorial Univ. Newfoundland, St. John's, Canada.] A listing of 88 birds of 29 spp. examined for their helminth parasite burdens with probable cause of death recorded.

GAME BIRDS--GENERAL

Gazanchyan, M. K. [THE PRESENT DISTRIBUTION OF COMMERCIAL GAME BIRDS IN AZERBAIDZHAN.] In: (Zoogeography of the land.) (Tashkent). p. 70-71. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 4I164. In Russian.] WR 120: 74

Hanson, Charles L. EXOTIC GAME BIRD INTRODUCTION PROGRAM IN OHIO: A PRELIMINARY EVALUATION. Game Res. Ohio 2: 205-214, 7 figs. Aug. 1963. WR 120: 75

[Magee Marsh Wildl. Area, Oak Harbor, Ohio.] Ohio's exotic game bird introduction program began in 1953. Pheasants being studied are the Reeves, Japanese green, Eastern and Western Iranian, Afghan white-winged, Korean, Reeves X ring-necked hybrid and Iranian X Ohio ring-necked hybrids. Available climatic data from the native ranges of these birds suggest that none is suited to Ohio's climate. Recommendations are made for securing a thorough evaluation of the ecological requirements and behavioral traits of any bird considered in the future for possible release.--From abstr.

Marysova, I. V. [THE COMMERCIAL BIRD FAUNA OF PODOLIA, ITS CONSERVATION AND RATIONAL USE.] In: (Notes on the conservation of natural resources in Podoliya.) (Ternopil'-Kremenets). p. 158-161. 1963. [From Biol. Abstr. 46 (3), 1965, from Referat. Zhur., Biol., 1964, no. 4I156. Transl. of Russian abstr.] WR 120: 75

Taurin'sh, B. Ya. [THE IMPORTANCE OF BIRDS FOR HUNTING IN THE LATVIAN SSR.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 188-190. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 11I354. In Russian.] WR 120: 75

Teplov, V. P. [URGENT TASKS IN THE STUDY AND RATIONAL UTILIZATION OF GAME BIRDS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 190-194. 1963. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1964, no. 11I353. In Russian.] WR 120: 75

Williamson, H. G., G. B. Wint, and Farrell F. Copelin. PRELIMINARY REPORT ON THE FIRST FOUR YEARS OF THE OKLAHOMA WATERFOWL AND UPLAND GAME HARVEST SURVEY, 1958 TO 1961. Proc. Okla. Acad. Sci. 43: 242-247. 1963. [From Biol. Abstr. 46(14), 1965.] WR 120: 75

[Wildl. Conserv. Dept., Oklahoma City, Okla.]

## QUAIL

Bacon, W., F. L. Cherms, and W. H. McShan. GONADOTROPIN ASSAY OF PITUITARIES FROM SEXUALLY MATURE MALE AND LAYING FEMALE COTURNIX QUAIL. Endocrinology 74 (3): 498-500. Mar. 1964. [From Bibliog Agr. 28(5), 1964.] WR 120: 75

Bishop, Richard A., and Charles R. Hungerford. SEASONAL FOOD SELECTION OF ARIZONA MEARNS QUAIL. J. Wildl. Mgmt. 29(4): 813-819, 1 fig. Oct. 1965. WR 120: 75

[Ariz. Coop. Wildl. Res. Unit, Tucson.] Abstract: The seasonal food selection of Mearns quail (Cyrtonyx montezumae mearnsi) in southeastern Arizona was studied by field observation and the analysis of 221 crops. This game bird often digs for its food, and bulbs and tubers (especially Oxalis sp. and Cyperus sp.) comprise a high percentage of the diet. Mearns quail are hunted in Arizona without depleting the population, but seasonal drought and overgrazing appear to be limiting factors.

Campbell, Howard, and Bruce K. Harris. MASS POPULATION DISPERSAL AND LONG-DISTANCE MOVEMENTS IN SCALED QUAIL. J. Wildl. Mgmt. 29(4): 801-805. Oct. 1965. WR 120: 75

[N. Mex. Dept. Game & Fish, Albuquerque.] Abstract: A mass dispersal in a natural population of scaled quail (Callipepla squamata) involving unusual long-distance movements in this normally rather sedentary species took place in 1961 in southeastern New Mexico and western Texas. Hunter band recoveries indicated that quail movements of 10-25 miles were probably common. One bird moved at least 60 miles. Both sexes and adults as well as young-of-the-year were involved in the dispersal.

Smith, Ronald H., and Steve Gallizioli. PREDICTING HUNTER SUCCESS BY MEANS OF A SPRING CALL COUNT OF GAMBEL QUAIL. J. Wildl. Mgmt. 29(4): 806-813, 2 figs. Oct. 1965. WR 120: 76

[Ariz. Game & Fish Dept., Phoenix.] Abstract: A study of spring call counts of male Gambel Quail (Lophortyx gambelii) in relation to hunting success has revealed a linear relationship which has made possible the accurate prediction of hunter success for the year of the count. On three study areas in central Arizona call counts in April and May were correlated with hunter success during the first 2 weekends of the quail season. A linear regression equation was used as a predictor for each area. Further analysis showed a significant difference in mean hunting success on the three areas after adjusting to a similar call index. These differences were largely accounted for by cover and topography which influenced success. A knowledge of the relationship between site factors and success of hunters made possible the use of a single predicting equation for all three areas. The average absolute deviation of predicted success from actual success was only 12 percent.

Wentworth, B. C., and W. J. Mellen. ANTI-TESTIS ANTIBODIES AND FECUNDITY IN FEMALE JAPANESE QUAIL. Physiol. Zoöl. 38(4): 361-369. Oct. 1965. WR 120: 76

[Univ. Mass., Amherst.]

## PHEASANTS

Acton, Robert W. ELLIOT'S PHEASANT PROGRAM: AN EVALUATION. Game Res. Ohio 2: 222-235, 9 figs. Aug. 1963. WR 120: 76

[Urbana State Game Farm, Urbana, Ohio.] A captive population of Elliot's barred-backed pheasants was maintained at the Waterloo Wildlife Experiment Station from 1953 to 1960 to evaluate its potential for establishment in southeastern unglaciated Ohio. Genetic drift, inbreeding, and natural selection in the small, closed captive population have undoubtedly eliminated some genes and changed the frequency of others. Lowered fertility and survival have so reduced reproductive success that the probability of establishing a wild population is very slight.--From abstr.

Edwards, William R. EVALUATION OF PHEASANT REFUGE MANAGEMENT IN OHIO. Game Res. Ohio 2: 119-132. Aug. 1963. WR 120: 76

[Ill. Nat. Hist. Surv., Urbana.] Since a refuge program does not appear to be ecologically justified and detracts from the emphasis which can be given to more profitable aspects of ringneck management, it is recommended that Ohio not engage in a pheasant refuge program.--From abstr.

Edwards, William R. PROPORTIONATE HARVEST OF RING-NECKED PHEASANT COCKS AND HENS. Game Res. Ohio 2: 11-22. Aug. 1963. WR 120: 76

[Ill. Nat. Hist. Surv., Urbana.] It was estimated that 76 percent of the cocks and 16 percent of the hens in the fall ringneck population realize mortality as a direct result of hunting. The estimated proportionate hen mortality realized in this study is well below that estimated for Wood County in the late 1930's by Leedy and Hicks (1945). The present estimate is considered to be well within the range of harvest that this sex can tolerate without realizing depressed population levels in succeeding hunting seasons. Available data suggest that further liberalization of the pheasant hunting season in Ohio is biologically feasible.--From abstr.

Gray, Nigel. PHEASANTS AND FORESTRY. A BASIC LAYOUT. Quart. J. Forestry 58(2): 142-147, illus. 1964. [From Biol. Abstr. 46(6), 1965.] WR 120: 76

A flexible layout for a game covert is described and figured. Four basic principles are incorporated: ground shelter and nesting cover, shelter for roosting, a good pattern of paths, and a well sited flushing and collecting area.

Knoder, C. Eugene. GENETIC ANALYSIS OF HYBRIDS BETWEEN THE AVIAN GENERA SYRMATICUS AND PHASIANUS. Game Res. Ohio 2: 215-222. Aug. 1963. WR 120: 77
[Patuxent Wildl. Res. Center, Laurel, Md.]

Korschgen, Leroy J., Glenn D. Chambers, and Kenneth C. Sadler. DIGESTION RATE OF LIMESTONE FORCE-FED TO PHEASANTS. J. Wildl. Mgmt. 29(4): 820-823. Oct. 1965. WR 120: 77
[Mo Conserv. Comm., Columbia.] Abstract: Tests were conducted to learn the erosion (disappearance) rate of marked limestone in the digestive tracts of penned pheasants (Phasianus colchicus) force-fed known amounts. The erosion rate was progressive and amounted to approximately 46 percent in 12 hours, 89 percent in 24 hours, and 95 percent in 36 hours. These data show that all calcareous grit may not be detected by standard food-habits study procedures. This may explain why chemical analyses of principal foods of wild pheasants, as shown by a study of crop and gizzard contents, generally show levels of calcium much below known requirements for penned birds.

Lugovoi, A. E. [THE PHEASANT IN THE VOLGA DELTA.] "Volga" (Astrakhan). 24 p., illus. 1962. 4 kopecks. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 24I186K. Transl. of Russian abstr.] WR 120: 77
General measures required to increase the pheasant population in the Volga Delta are discussed.

Martinson, R. Kahler. PHEASANT WINTER SEX RATIO, 1961. Game Res. Ohio 2: 22-23. Aug. 1963. WR 120: 77
[19 E. Villard, Dickinson, N. Dak.] Abstract: Winter pheasant sex ratio counts were conducted in 38 Ohio counties from Jan. through Mar. 1961. The statewide pheasant sex ratio was 26 cocks per 100 hens. The calculated percentage of cocks harvested in 1960 was the same as 1959.

Raimo, H. F., L. A. Penteado, C. E. M. Machado, and B. Cintra. [CONTRIBUTION TO THE STUDY OF INDUSTRIAL PRODUCTION OF THE RING-NECKED PHEASANT.] B. Indus. Anim. 20: 347-359. Dec. 1962. [From Bibliog. Agr. 28(5), 1964. In Portuguese.] WR 120: 77
"Brazil."

Seibert, Henri C. METABOLIZABLE ENERGY IN THE REEVES PHEASANT. Game Res. Ohio 2: 185-200, 12 figs. Aug. 1963. WR 120: 77
[Ohio Univ., Athens.] Regressions expressing the calories of energy metabolized by Reeves pheasants per degree Fahrenheit were obtained for the entire range of temperatures tolerated by the birds on both a 9-hour and 15-hour photoperiod. Productive energy curves for both sexes were calculated for the Athens, Ohio, region. In males, the greatest surplus energy exists from Aug. to Oct., whereas in females it occurs from May to July. Metabolizable energy consumption was predicted, based on the regression curves, for out-of-door birds: the agreement between the actual and predicted values was very close in most instances. Further application of these data is discussed.--From abstr.

GROUSE, PARTRIDGE, ETC.

Bakeev, N. N. [A COUNT OF GALLINAE BASED ON DEPRESSIONS MADE BY THEM IN THE SNOW.] In: (Organization and counting methods of birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 20-22. 1963. [From Biol. Abstr. 46 (10), 1965, from Referat. Zhur., Biol., 1964, no. I109. Transl. of Russian abstr.] WR 120: 77

Bakeev, N. N., and V. I. Osmolovskaya. [THE NUMBER OF TETRAONIDAE IN THE URAL AND TRANSURAL REGIONS.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69 (3): 49-63, illus., map. 1964. [From Biol. Abstr. 46(7), 1965. In Russian.] WR 120: 77



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Borovitskaya, G. K. [MATERIAL ON PROBLEMS OF RATIONAL EXPLOITATION AND CONSERVATION OF GALLINACEOUS BIRDS IN THE BURYAT AUTONOMOUS SSR.] In: (Problems on conservation of nature in Buryatiya.) (Ulan-Ude). p. 67-73. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 12I252. [Transl. of Russian abstr.] WR 120: 78

Dolbik, M. S. [FEEDING OF THE WOOD GROUSE AND THE HAZEL GROUSE IN BELORUSSIA.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 57-61. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 11I235. In Russian.] WR 120: 78

Donohoe, Robert W. DRUMMING COUNTS AS ESTIMATES OF RUFFED GROUSE DENSITY. Game Res. Ohio 2: 159-160. Aug. 1963. WR 120: 78
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Average number of acres per drumming cock by year in this Ohio study was: 35.7 for 1958, 62.5 for 1959 and 50.0 for 1960.

Donohoe, Robert W., and R. Kahler Martinson. RUFFED GROUSE DRUMMING COUNTS, 1960 AND 1961. Game Res. Ohio 2: 32-34, 2 figs. Aug. 1963. WR 120: 78
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Abstract: Ruffed grouse drumming counts were made in 17 Ohio counties from April 10-30, 1960 and April 10-May 6, 1961. The 1960 index, 0.784 drums per stop, was higher than the indices for 1958 and 1959. The 1961 index, 0.522 drums per stop, was lowest of the four years for which data are available. It is concluded that basic understanding of the census technique is inadequate to draw positive conclusions from the data. Inclement weather, rather than an actual population decline, was probably responsible for the index drop in 1961.

Georgiev, Zh. [FEEDING OF THE NESTLINGS AND YOUNG OF ALECTORIS GRAECA CYPRIOTES HART.] Izv. Zool. Inst. Sofia 14: 141-152. 1963. [From Ibis 107 (4), 1965. In Russian with German summ.] WR 120: 78

Gubkin, A. A. [PROCEDURE OF METHODS FOR TAKING A COUNT OF THE CAPERCAILZIE ON ITS BELOVEZHA FOREST MATING GROUNDS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 49-50. 1963. [From Biol. Abstr. 46(10), 1965, from Referat. Zhur., Biol., 1964, no. 8I110. In Russian.] WR 120: 78

Hanson, Charles L. RUFFED GROUSE AGE AND SEX RATIOS, 1960-61 HUNTING SEASON. Game Res. Ohio 2: 34-38, 2 figs. Aug. 1963. WR 120: 78
[Sabino Canyon Visitor Center, Coronado Natl. Forest, Tucson, Ariz.] Abstract: A total of 256 usable wing and tail samples from ruffed grouse were received from hunters during the 1960-61 open season. This sample showed a sex ratio of 161:100 (♂:♀), an age ratio of 153:100 (adult:immature), and an adult hen:immature ratio of 1:1.8. The sex ratio seems normal for a grouse population sampled by gunning in the fall, but the age ratio is low enough to indicate a declining population. Aging and sexing techniques are discussed, with a modification recommended for the standard sexing techniques.

Hanson, Charles L. RUFFED GROUSE HARVEST, 1960-61 HUNTING SEASON. Game Res. Ohio 2: 38-41, 1 fig. Aug. 1963. WR 120: 78
[Sabino Canyon Visitor Center, Coronado Natl. Forest, Tucson, Ariz.] During the 1960-61 grouse hunting season 1,215 known grouse hunters were sent questionnaires. The 134 (11 per cent) usable returns showed that the sampled hunters averaged 1.78 grouse seen per trip (0.43 per hour) and 0.32 killed per trip (0.076 per hour). These statistics show a slight increase over similar figures for 1959, but are still considerably under the peak figures of 1956. Hunter success was higher in the second half of the season, although hunting pressure was lighter.--From abstr.

Kingston, Newton. ON THE LIFE CYCLE OF BRACHYLECITHUM ORFI KINGSTON AND FREEMAN, 1959 (TREMATODA: DICROCOELIIDAE), FROM THE LIVER OF THE RUFFED GROUSE, BONASA UMBELLUS L. INFECTIONS IN THE VERTEBRATE AND MOLLUSCAN HOSTS. Canadian J. Zool. 43(5): 745-764 + 30 figs. on 2 pls. Sept. 1965. WR 120: 78
[Geneva Coll., Beaver Falls, Pa.]

Kingston, Newton. ON THE MORPHOLOGY AND LIFE CYCLE OF THE TREMATODE TANAISIA ZARUDNYI (SKRJABIN, 1924) BYRD AND DENTON, 1950, FROM THE RUFFED GROUSE, BONASA UMBELLUS L. Canadian J. Zool. 43(6): 953-969, 16 figs. Nov. 1965. WR 120: 79
[Geneva Coll., Beaver Falls, Pa.]

Kiselev, Yu. N. [EXPERIMENT ON THE USE OF ROMANOV BLIND TRAPS IN THE OKSK FOREST PRESERVE.] Trudy Oksk. Gos. Zapovednika 4: 441-442. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 14I165. Transl. of Russian abstr.] WR 120: 79
"Tetrao urogallus."

Kobriger, Gerald D. STATUS, MOVEMENTS, HABITATS, AND FOODS OF PRAIRIE GROUSE ON A SANDHILLS REFUGE. J. Wildl. Mgmt. 29(4): 788-800, 4 figs. Oct. 1965. WR 120: 79
[N. Dak. Game & Fish Dept., Dickinson.] Abstract: Sharp-tailed grouse (Pedioecetes phasianellus) are maintaining high population densities on Valentine National Wildlife Refuge in the Nebraska sandhills, but prairie chickens (Tympanuchus cupido) are much less numerous. Sharptails are permanent residents on the refuge, but prairie chickens apparently leave during the winter months. Dispersal of 35 sharptails from winter feeding stations to dancing grounds averaged 0.9 mile (extremes 0.2-3.3 miles). Of the 35 marked sharptails sighted on dancing grounds, 20 had moved to the dancing ground nearest the feeding station. Movements of one sharptail female from a dancing ground to a nest site (2 miles) were monitored by radio telemetry. One sharptail male was followed through the summer months by the same method: it moved about 2.5 miles from the dancing ground. Three-fourths of all breeding grounds (dancing grounds of sharptails or booming grounds of prairie chickens) were on mowed wetland sites. The diet of juvenile sharptails, to 10 weeks of age, consisted mostly of insects. At 12 weeks of age the diet was like that of the adults, over 90 percent vegetable matter. Volumetrically, the most important food items for adults were clovers (Trifolium spp.), rose (Rosa sp.), sand cherry (Prunus besseyi), and common dandelion (Taraxacum officinale). Mowing of wetlands appeared to be beneficial for maintenance of important foods such as clovers and possibly for maintenance of breeding grounds.

Korenberg, E. I., V. I. Kuznetsov, and Yu. V. Kovalevskii. [TOTAL GROUSE POPULATION COUNTS BY MEANS OF FLUSHING.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(5): 134-135. 1963. [From Biol. Abstr. 46(5), 1965. In Russian.] WR 120: 79

Kozlovskii, A. [THE EFFECT OF FOREST CUTTINGS ON THE SIZE OF THE CAPERCAILLIE POPULATION.] Okhota & Okhotnich'e Khoz. 11: 31-32. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 11I371. Transl. of Russian abstr.] WR 120: 79

Kuz'mina, M. A. [SOME SPECIFIC ADAPTIVE CHARACTERISTICS OF THE LEGS OF FOWL.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 52-54. 1962. [From Biol. Abstr. 46(7), 1965, from Referat. Zhur., Biol., 1963, no. 20I144. Transl. of Russian abstr.] WR 120: 79
[Capercaillie, partridge and willow grouse.]

Nikul'tsev, A. P. [ATTEMPT AT GRADING GAME LANDS FOR GROUSE.] Sbornik Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya Pushniny 4 (7): 37-43. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 12I242. Transl. of Russian abstr.] WR 120: 79

Pergolani-De Costa, Maria Juana. PAVAS DE MONTE. [SOME WILD GALLIFORMES OF CENTRAL AND SOUTH AMERICA.] An. Soc. Rural Argent. 98(8): 72-75, illus. 1964. [From Biol. Abstr. 46(9), 1965. In Spanish.] WR 120: 79

Romanov, A. N. [A COUNT AND IDENTIFICATION OF THE WILD GALLINAE RESOURCES IN THE TAIGA BY MEANS OF BIRD-BANDING.] In: (Organization and counting methods of birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 23-27. 1963. [From Biol. Abstr. 46(12), 1965, from Referat. Zhur., Biol., 1964, no. 8I108. Transl. of Russian abstr.] WR 120: 80

A relative count of tetraonids is recommended to be based on their capture by commercial snares or by trapping them alive and calculating the number of birds caught in 100 trap-days. An absolute count is also recommended by means of banding ratios. The author's automatic banding loop system is recommended for a mass marking of birds. A count of Tetrao urogalli taken in one of the regions of the Komi Autonomous SSR is quoted.

Safronov, M. [EXPERIENCE IN TRANSPLANTING GROUSE.] Okhota & Okhotnich'e Khoz. 4: 4-5. 1963. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 24I191. Transl. of Russian abstr.] WR 120: 80

Semenov-Tyan-Shanskii, O. I. [THE PROCEDURE FOR COUNTING GALLINAE.] In: (Organization and methods for counting birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 5-11. 1963. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 8I107. Transl. of Russian abstr.] WR 120: 80

Shtegman, B. K. [FLIGHT CHARACTERISTICS OF THE SAND GROUSE.] Zool. Zhur. 36(10): 1521-1529. 1957. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1959, no. 80028. Transl. of Russian abstr. Original in Russian with German summ.] WR 120: 80

Weeden, Robert B. GROUSE AND PTARMIGAN IN ALASKA / THEIR ECOLOGY AND MANAGEMENT. Alaska Dept. Fish & Game. v + 110 p., 18 figs. July 1965. WR 120: 80

The status of the blue grouse, spruce grouse, ruffed grouse, sharp-tailed grouse, the willow ptarmigan, rock ptarmigan, and the white-tailed ptarmigan in Alaska.

## TURKEY

Donohoe, Robert W. WILD TURKEY PRODUCTIVITY, 1958-60. Game Res. Ohio 2: 41-42. Aug. 1963. WR 120: 80

[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Abstract: This report summarizes wild turkey observations in five large forested areas of Ohio, April-December, 1958-60. A total of 788 wild turkeys were reported seen, including 35 broods. The yearly breakdown was as follows: 1960 -- 227 turkeys seen, including 3 broods; 1959 -- 311 turkeys seen, including 12 broods; 1958 -- 250 turkeys seen, including 20 broods. These data strongly suggest that the wild turkey has been reintroduced successfully in some areas of the state. Recommendation is made for a limited open season on wild turkeys in the near future.

Donohoe, Robert W. WILD TURKEY RESTOCKING, 1956-61. Game Res. Ohio 2: 235-237, 1 fig. Aug. 1963. WR 120: 80

[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.]

Donohoe, Robert W., and R. Kahler Martinson. WILD TURKEY INVENTORY, 1958-61. Game Res. Ohio 2: 43-45, 1 fig. Aug. 1963. WR 120: 80

[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Spring gobbling counts on 7 release areas in south central Ohio.

Alapulli, Juhani. KESYKYYHKYN (COLUMBA LIVIA) LEVINNEISYYDESTA POHJOIS-SUOMESSA VV. 1900-1964. [THE DISTRIBUTION OF ROCK DOVES (COLUMBA LIVIA) IN NORTHERN FINLAND 1900-1964.] Ornis Fennica 41(2): 43-48. 1964. [From Biol. Abstr. 46(10), 1965. In Finnish with German summ.] WR 120: 81

Dekker, D. SERIE-ONDERZOEK BIJ TURKSE TORTELS (STREPTOPELIA DECAOCTO). [INVESTIGATIONS OF A SERIES OF COLLARED DOVES.] Limosa 36: 141-148. 1963. [From Ibis 107(4), 1965. In Dutch.] WR 120: 81

Erickson, Carl J., and Daniel S. Lehrman. EFFECT OF CASTRATION OF MALE RING DOVES UPON OVARIAN ACTIVITY OF FEMALES. J. Comp. Physiol. Psychol. 58(2): 164-166. 1964. [From Biol. Abstr. 46(5), 1965.] WR 120: 81
[Rutgers Univ., New Brunswick, N. J.]

Keeler, Clyde E. ALBINISM AND DIET CHOICE IN THE RING NECK DOVE. J. Heredity 54(6): 289-291. 1963. [From Biol. Abstr. 46(5), 1965.] WR 120: 81
[Milledgeville State Hosp., Milledgeville, Ga.]

Leys, H. N. HET VOORKOMEN VAN DE TURKSE TORTEL (STREPTOPELIA DECAOCTO (FRIV.)) IN NEDERLAND. [THE OCCURRENCE OF THE COLLARED DOVE (STREPTOPELIA DECAOCTO (FRIV.)) IN HOLLAND.] Limosa 37: 232-263. 1964. [From Ibis 107(4), 1965. In Dutch.] WR 120: 81
Abstract: The collared dove first bred in Holland in 1949 or 1950, but by 1963 about 5,300 pairs bred. The 1963/64 winter population was between twenty and thirty thousand. Maps of the approximate increase of 30% per annum are given.

Mackey, James P. COOING FREQUENCY AND PERMANENCE OF PAIRING OF MOURNING DOVES. J. Wildl. Mgmt. 29(4): 824-829. Oct. 1965. WR 120: 81
[San Francisco State Coll., San Francisco, Calif.] Abstract: Marked mourning doves (Zenaidura macroura) were studied in the field during 1952 and 1953. Paired doves did not separate or appear to alter their behavior after they were marked with red and orange airplane dope. The breeding population probably was migratory, since none of these birds were captured in baited traps during the winter. Four pairs of marked doves did not change mates throughout one nesting season, and three pairs of doves had the same mates during two successive seasons. No doves were known to have changed mates. Observations indicated that some doves might have been paired during the winter. Records were made of the early morning perch-cooing of marked doves. The cooing frequencies were highest during intervals between nestings and lowest during the brooding stage of the nesting cycle. One mated male cooed at a rate as high as those reported in the literature for unmated males.

Martinson, R. Kahler. MOURNING DOVE BREEDING POPULATION INVENTORY, 1961. Game Res. Ohio 2: 27-31, 3 figs. Aug. 1963. WR 120: 81
[19 E. Villard, Dickinson, N. Dak.] Mourning dove call-count surveys were conducted in 15 Ohio counties, Apr.-Oct. 1961. The peak of calling activity occurred during late May and June. Visual counts indicated that (1) the 1961 peak of dove numbers was not so great as in 1960; (2) the peak occurred somewhat later; and (3) comparatively more doves remained within the state through the end of the survey period in 1961 than in 1960.--From abstr.

Martinson, R. Kahler. MOURNING DOVE FALL POPULATION STATUS, 1960 AND 1961. Game Res. Ohio 2: 23-26, 2 figs. Aug. 1963. WR 120: 81
[19 E. Villard, Dickinson, N. Dak.] In both years the average number of doves observed was highest in western Ohio and lowest in the southeastern unglaciated Appalachian plateau region.--From abstr.

Martinson, R. Kahler. MOURNING DOVE MOVEMENT STUDY, 1960 AND 1961. Game Res. Ohio 2: 171-175, 3 figs. Aug. 1963. WR 120: 81
[19 E. Villard, Dickinson, N. Dak.] In 1960, 1,653 doves (1,215 nestlings and 438 flying birds) were banded in Ohio. In 1961, 2,533 doves were banded (1,950 nestlings and 583 flying birds). Ohio dove band recoveries are summarized.--From abstr.

McFarland, David J. INTERACTION OF HUNGER AND THIRST IN THE BARBARY DOVE. J. Comp. Physiol. Psychol. 58(2): 174-179, illus. 1964. [From Biol. Abstr. 46(5), 1965.] WR 120: 82
[Oxford Univ., Oxford, England.]

## WATERFOWL

Barancheev, L. M. [THE NESTING OF GEESE IN AMUR OBLAST.] Amursk. Knizhnoe Izd. Blagoveshchensk. 5: 139-144. 1961. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 4I222. Transl. of Russian abstr.] WR 120: 82

Bednarik, Karl E. CANADA GOOSE MANAGEMENT UNITS IN OHIO. Game Res. Ohio 2: 244-260, 8 figs. Aug. 1963. WR 120: 82
[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: Captive flocks of Canada geese have been maintained on three waterfowl refuge areas in Ohio from 1957 through 1960. The history and management of these and other goose management areas in Ohio are reviewed. Gosling production and goose harvest from each area are described. A total of 1129 goslings are known to have been produced on these three areas in the four-year period: 465 were produced in 1960.

Bednarik, Karl E. WATER LEVEL MANIPULATIONS AND WATERFOWL HARVESTS ON THE MAGEE MARSH. Game Res. Ohio 2: 145-158, 3 figs. Aug. 1963. WR 120: 82
[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: This report describes ten years (1951-60) of controlled public waterfowl hunting at Ohio's Magee Marsh Wildlife Area on Lake Erie. Water level manipulations of the marsh units since 1956, and waterfowl migrations and harvests in 1959 and 1960, are described in detail. Factors affecting the waterfowl harvests are discussed: (1) effects of experimental marsh unit drawdowns on plant associations; (2) utilization of the various marsh units by waterfowl as a result of changes in plant species composition; (3) physical ability of hunters to utilize the various segments of the marsh as a result of water level conditions; (4) hunting pressure.

Bednarik, Karl E. WATER LEVELS AND WATERFOWL PRODUCTION IN LAKE ERIE MARSHES. Game Res. Ohio 2: 176-184, 1 fig. Aug. 1963. WR 120: 82
[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Abstract: Waterfowl breeding pairs and production data, 1953 through 1961, are presented for the Lake Erie marsh region of Ohio, with particular reference to the Magee Marsh in Ottawa County. Earlier estimates of breeding duck populations and production are reviewed. The effects of water level manipulation on waterfowl nesting in the Magee Marsh are discussed. The most common nesting species are mallards, black ducks, blue-winged teal and wood ducks. Green-winged teal, shovelers, pintail, redheads and ruddy ducks have also been recorded. Fifty-four breeding pairs of ducks were recorded on the Magee Marsh in 1953; 203 were recorded in 1961, an increase of 276 per cent.

Bednarik, Karl E. WATERFOWL NESTING POPULATION ESTABLISHMENT, 1960. Game Res. Ohio 2: 238-243. Aug. 1963. WR 120: 82
[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] Releases of hand-reared, seven-week-old waterfowl into unoccupied habitat in Ohio were initiated in 1958. Waterfowl releases--primarily mallards--during the summer of 1960 and band recoveries through the 1960 waterfowling season are described. From 2,746 mallard ducklings released, 257 bands (9.3 percent) were recovered and reported: 222 (86.3 percent) were recovered in Ohio and 35 (13.6 percent) were recovered north of their release sites. An estimated 564 (20.5 percent) of the 1960 release stock were killed in the following waterfowling season.--From abstr.

Bednarik, Karl E. WOOD DUCK TRAPPING AND BANDING, 1959-61. Game Res. Ohio 2: 161-169, 2 figs. Aug. 1963. WR 120: 83

[Crane Creek Wildl. Expt. Sta., Oak Harbor, Ohio.] In 1959, the Mississippi Flyway Council initiated a flyway-wide wood duck research program. A review of the objectives are presented in this report. Ohio wood duck banding data are presented for the years 1959-61. Ohio has annually fulfilled the Council's objective of banding at least 500 wood ducks in each Mississippi Flyway state--528 were banded in 1959, 656 in 1960, and 1381 in 1961.--From abstr.

Beshears, W. Walter, Jr. ALABAMA WOOD DUCKS SHOW STRONG TENDENCY TOWARD RETURNING TO SAME NESTING, REARING AREA. Ala. Conserv. 35(5): 11-13, illus. Aug.-Sept. 1965. WR 120: 83

Popular account on wood duck trapping, artificial nest boxes, homing and imprinting.

Blum, P. N. [STUDY OF THE POST-EMBRYONIC DEVELOPMENT OF THE BALD COOT (FULICA ATRA) IN NATURAL CONDITIONS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 16-17. 1963. [From Biol. Abstr. 46(7), 1965, from Referat. Zhur., Biol., 1964, no. 11I214. In Russian.] WR 120: 83

Bolen, Eric G. WEIGHTS AND LINEAR MEASUREMENTS OF BLACK-BELLIED TREE DUCKS. Texas J. Sci. 16(2): 257-260. 1964. [From Biol. Abstr. 46(3), 1965.] WR 120: 83

[Welder Wildl. Foundation, Sinton, Texas.] "Dendrocygna autumnalis fulgens."

Brakhage, George K. BIOLOGY AND BEHAVIOR OF TUB-NESTING CANADA GEESE. J. Wildl. Mgmt. 29(4): 751-771, 1 fig. Oct. 1965. WR 120: 83

[Mo. Conserv. Comm., Columbia.] Abstract: A 3-year study (1961-64) of a sedentary flock of Canada geese (Branta canadensis maxima) is reported. A detailed study of full-winged birds was possible because each was individually color-marked and of known age and sex. Most pairs nested in elevated wash tubs which provided protection from predators during the laying period. Courtship, density of nests, and territorial requirements are discussed. Ten percent of yearling males nested. Females became productive in their second year with one-third of them nesting. Ninety percent or more of males 2 years and older and females 3 years and older paired. Polygamy was not uncommon. Nesting territories were selected by the females and defended primarily by the males. Females had an affinity for their nest sites in subsequent years. The rate of laying was one egg each 1.5 days. There was a direct relationship between age of females and initiation of laying; older females nested first. Eggs of maxima were similar to those of other subspecies. Egg size was related to age of females; 5-year-old birds laid the largest eggs. Down appeared most often with the fourth egg. Clutches of successful tub-nesting females averaged 5.5 eggs while successful ground-nesting females averaged 4.6 eggs. Older females laid larger clutches and hatched a larger percentage of their eggs than did younger females. The duration of breeding season was influenced primarily by renesting. Females incubated 28 days; males anticipated hatching. Females incubated dead eggs 1.5 times normal length. Goslings were held in the tubs about 24 hours after hatching and became imprinted to their parents. Broods were called from the tubs by their parents, and the nesting territory was abandoned as the new family swam away. Loss of production in tub nests was primarily because of desertions and in ground nests because of destructions. Renests were of two types: continuation nests, which were located an average of 96 yards from destroyed nests, and true renests, which were located an average of 243 yards away. Clutch sizes were the same in original and renests but were smaller in continuation nests. The average renesting interval was 13 days and was directly related to the number of eggs in the original nest. Seventy-three percent of incubated eggs hatched, 5 percent were infertile, and 22 percent died during incubation. Broods retained their identity for about 7 days, then gradually formed creches of increasing size. Creches were accompanied by both productive pairs and nonbreeding females. Gosling mortality averaged 32 percent. Resident geese were almost as wild as migrants during the fall but were quite tame during the postmolting period.

Brassard, André. AMYLOIDOSIS IN CAPTIVE ANSERIFORMES. Canadian J. Comp. Med. & Vet. Sci. 29(10): 253-258, 8 figs. Oct. 1965. WR 120: 84
[Univ. Laval, Quebec, Canada.] During the period 1945-1962, percentage of deaths of anserine birds (ducks, geese and swans) did not vary remarkably from year to year even though the population has more than quadrupled during the same period. The number of deaths with amyloidosis has increased significantly even though the death rate did not change. The number of deaths due to tuberculosis, mould, renal diseases, hepatitis and infection accompanied by amyloidosis also increased, especially during the second half of the study period.--From summ.

Fog, M. THE MIGRATION OF GEESE THROUGH DENMARK. Dansk Ornith. Foren. Tidsskr. 58: 147-165. 1965. [From Ibis 107(4), 1965.] WR 120: 84
Abstract: Summarizes and discusses the records of ringed geese recovered in Denmark; data on geese marked in Denmark are not considered.

Gavrin, V. F., and N. V. Rakov. [THE SPRING MIGRATION OF DIVER BIRDS AT THE UPPER PART OF THE ARGUN' RIVER.] Migratsii Zhivotnykh. Akad. Nauk SSSR (Moscow) 1: 59-66. 1959. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1960, no. 61152. Transl. of Russian abstr.] WR 120: 84

Gyngazov, A. M. [ON EXPANSION OF THE DIVER POPULATION IN THE AREA OF NOVOSIBIRSKOE RESERVOIR.] Voprosy Okhrany Prirody Zapadnoi Sibiri (Novosibirsk) 3: 83-90. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 12I254. Transl. of Russian abstr.] WR 120: 84

Handley, Delmar E. WOOD DUCK PRODUCTION ON OHIO STREAMS, 1960. Game Res. Ohio 2: 93-94, 1 fig. Aug. 1963. WR 120: 84
[Ohio Div. Wildl., 1500 Dublin Rd., Columbus.] Abstract: Sixty-five broods of wood ducks were discovered on 95 linear miles of streams surveyed throughout Ohio during 1960. The 0.70 brood per linear mile surveyed was a 5.4 per cent decrease from 1959.

Hartung, Rolf. SOME EFFECTS OF OILING ON REPRODUCTION OF DUCKS. J. Wildl. Mgmt. 29(4): 872-874. Oct. 1965. WR 120: 84
[Univ. Mich., Ann Arbor.] Abstract: After ingestion of 2 gm/kg of a relatively nontoxic lubricating oil, one mallard (Anas platyrhynchos) and two Pekins stopped laying for about 2 weeks. Very small quantities of oil coated on mallard eggs reduced their hatchability to 21 percent compared to 80 percent found for unoiled mallard eggs. Experimentally oiled mallards continued incubating their clutches, but their eggs did not hatch even though they continued incubation for longer than normal periods.

Hellebrekers, W. P. J., and K. H. Voous. NESTPARASITISME VAN DE KROONEEND. [NEST PARASITISM BY THE RED-CRESTED POCHARD.] Limosa 37: 5-11. 1964. [From Ibis 107(4), 1965. In Dutch.] WR 120: 84
Abstract: Six instances of eggs of Netta rufina in nests of Anas platyrhynchos, and four in those of Anas strepera. Also abnormally large clutch sizes in genuine nests of the Red-crested Pochards.

Hilditch, W. G. DUCK CONSERVATION AT THE LOUGHINS, ISLANDMAGEE: AN EXPERIMENT BY THE LARNE LOUGH WILDFOWLERS' ASSOCIATION. Irish Nat. J. 14(8): 167-171, illus. 1963. [From Biol. Abstr. 46(1), 1965.] WR 120: 84
[29B Glenkeen Rd., Greenisland, Ireland.]

Joensen, A. H. [AN INVESTIGATION OF THE MOULTING AREAS OF THE COMMON SCOTER (MELANITTA NIGRA) AT THE SOUTHWEST COAST OF JUTLAND, DENMARK, 1963, WITH NOTES ON THE NEARBY MOULTING AREAS OF THE SHELDUCK (TADORNA TADORNA) AND THE EIDERDUCK (SOMATERIA MOLLISSIMA).] Dansk Ornithol. Foren. Tidsskr. 58: 127-136. 1965. [From Ibis 107(4), 1965. In Danish with English summ.] WR 120: 84

Karpovich, V. N., and S. G. Priklonskii. [TRAPPING DUCKS IN PERMANENT TRAPS ON RESTING DAYS IN FALL. 2.] Trudy Oksk. Gos. Zapovednika 4: 387-394, illus. 1962. [From Biol. Abstr. 46(5), 1965, from Referat. Zhur., Biol., 1963, no. 10I151. Transl. of Russian abstr.] WR 120: 85

Kashkarov, D. Yu. [OBSERVATIONS ON THE MIGRATION OF ANSERIFORMES ALONG THE MIDDLE COURSE OF THE SYR-DAR'YA RIVER.] In: (Zoogeography of the land.) (Tashkent). p. 129-130. 1963. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1964, no. 4I207. In Russian.] WR 120: 85

Kashkarov, D. Yu. [SOME REASONS FOR THE NATURAL DEATH OF NESTLINGS OF NETTA RUFFINA (RED-CRESTED POCHARD) IN THE AMU-DAR'I DELTA.] Uzbekskii Biol. Zhur. 7(3): 54-56. 1963. [From Biol. Abstr. 46(4), 1965. In Russian.] WR 120: 85

From counts of birds made in June-July 1961, it was estimated that deaths of birds from the time of emergence from the nest to the following summer was 76%, with the highest mortality in the early life of the ducklings. Many of the deaths were attributed to predators: marsh harrier (Circus aeruginosus), carrion crow (Corvus corone orientalis) and herring gull (Larus argentatus).

Knight, Richard R. VEGETATIVE CHARACTERISTICS AND WATERFOWL USAGE OF A MONTANA WATER AREA. J. Wildl. Mgmt. 29(4): 782-788, 2 figs. Oct. 1965. WR 120: 85

[Mont. Fish & Game Dept., Augusta.] Abstract: During the summers of 1956 and 1959, a study was conducted to determine changes in characteristics of vegetation and waterfowl usage of a pond area in Teton County, Montana. Aquatic vegetation increased on the area during that time, with growth in sago pondweed (Potamogeton pectinatus), stonewort (Chara vulgaris), and alkali bulrush (Scirpus paludosus) the most significant. Changes in portions of the terrestrial vegetation were noted; one such change was accompanied by an increase in nesting. Total numbers of waterfowl and number of species and nests increased during the study period. An apparent decrease in brood usage may have been the result of the difficulty of observing waterfowl in denser vegetation during the second year.

Lawrence, Robert George. RELATIONSHIPS OF CERTAIN CLIMATOLOGICAL FACTORS TO THE AUTUMN MIGRATION OF WATERFOWL IN THE CENTRAL FLYWAY. Ph.D. thesis, Okla. State Univ. 184 p. 1964. [From Dissertation Abstr. 26(3), 1965.] WR 120: 85

Due to varied weather and water conditions, the pattern of waterfowl migration varied considerably from year to year. Falling temperatures produced more major movements of waterfowl than any other weather conditions measured. The passage of a strong cold front usually coincided with the migratory departure of dabbler ducks but not for geese and diver ducks. Cloud cover was greater during periods of departure than during periods of no migration. Upper air tailwinds and crosswinds often accompanied major departures; headwinds and variable winds were typical during periods of no migration. Barometric pressure change, direction of surface wind, and rain did not appear to be related to migratory movement of waterfowl.

Leinonen, Matti. LINNUSTON KVANTITATIIVISISTA SUHTEISTA MUUTAMISSA MANTAN SEUDUN OLIGO- JA EUTROFISISSA VESISSA. [THE NUMBERS OF BIRDS IN SOME OLIGOTROPHIC AND EUTROPIC LAKES IN THE REGION OF MANTTA.] Ornis Fennica 41(2): 49-56. 1964. [From Biol. Abstr. 46(13), 1965. In Finnish with German summ.] WR 120: 85

Lofts, B., and C. J. F. Coombs. PHOTOPERIODISM AND THE TESTICULAR REFRACTORY PERIOD IN THE MALLARD. J. Zool. (Proc. Zool. Soc. London) 146(1): 44-54, 1 fig. Sept. 1965. WR 120: 85

[St. Bartholomew's Hospital Med. Coll., Univ. London, London, England.] Abstract: The effects of winter daylengths on the duration of pituitary refractoriness to photostimulation are described. The mallard, as do probably all wild avian species, enters a postnuptial refractory period during which

the gonads display no gametogenesis and the anterior pituitary becomes seasonally unresponsive to photostimulation so far as gonadotrophin secretion is concerned. This phase lasts about three months and is an important synchronizer of the breeding cycles. Refractory specimens kept under a summer daylength of 16.5 hours remain unresponsive to photostimulation at a time when birds in their natural environment are emerging from their refractory period. When, however, such birds are subjected to a period of eight hours daylengths there is a shortening of the refractory phase and they display a gonadotrophic response to photostimulation. There is some indication that a phase of winter daylengths is not, however, a necessary pre-requisite for birds to be capable of emerging from the refractory period and recovering some degree of spermatogenetic activity. Thus, even in some specimens kept under the long photoperiods there were spermatogonia multiplications occurring when the experiment was terminated.

Markov, V. I. [CHARACTERISTICS OF THE WINTERING GROUNDS OF WATER FOWL IN THE MIDDLE SECTION OF EASTERN KAMCHATKA.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 87-89. 1962. [From Biol. Abstr. 46(1), 1965, from Referat. Zhur., Biol., 1963, no. 15I214. In Russian.] WR 120: 86

Martinson, R. Kahler. WATERFOWL HARVEST, 1960. Game Res. Ohio 2: 88-92, 1 fig. Aug. 1963. WR 120: 86
[19 E. Villard, Dickinson, N. Dak.] Abstract: The results of the Fish and Wildlife Service 1960-61 waterfowl kill survey for Ohio are presented. Although the average individual duck kill was lower this year, an increased number of hunters killed nearly as many ducks as in 1959. The goose harvest, augmented by an increase in the blue goose kill, was substantially higher. The problem encountered with the existing sampling technique for the state of Ohio is discussed.

Martinson, R. Kahler. WATERFOWL NUMBERS DURING THE FALL AND WINTER MIGRATION, 1960-61 AND 1961-62. Game Res. Ohio 2: 78-88, 7 figs. Aug. 1963. WR 120: 86
[19 E. Villard, Dickinson, N. Dak.] Trends in waterfowl populations in Ohio.

Martinson, R. Kahler. WOOD DUCK NEST BOX UTILIZATION, 1961. Game Res. Ohio 2: 96-97, 1 fig. Aug. 1963. WR 120: 86
[19 E. Villard, Dickinson, N. Dak.] Abstract: Of 1,569 usable wood duck nest boxes checked in Ohio in early summer 1961, 461 were used for nesting. This was an increase over 1960 of 393 usable boxes and 88 boxes used; percentages of utilization were similar for the two years. Recommendations are made to conduct two nest box checks in 1962: one about the end of May, and one in August.

Martinson, R. Kahler. WOOD DUCK PRODUCTION ON OHIO STREAMS, 1961. Game Res. Ohio 2: 94-96, 1 fig. Aug. 1963. WR 120: 86
[19 E. Villard, Dickinson, N. Dak.] Abstract: One hundred and three broods of wood ducks were observed on 389 linear miles of 11 Ohio stream segments surveyed in 1961. The brood-per-mile ratio was slightly below 1960, but variability in the survey technique precludes critical analysis of the data. Recommendations are made for standardizing the survey segments and techniques.

Mikhel'son, Kh., and G. Lein'sh. [BIRD ISLANDS. WAYS TO AN ABUNDANCE OF AQUATIC GAME BIRDS.] Okhota & Okhotnich'e Khoz. 10: 3-6. 1963. [From Biol. Abstr. 46(14), 1965, from Referat. Zhur., Biol., 1964, no. 11I360. Transl. of Russian abstr.] WR 120: 86

Milne, H. SEASONAL MOVEMENTS AND DISTRIBUTION OF EIDERS IN NORTHEAST SCOTLAND. Bird Study 12(3): 170-180, 2 figs. Sept. 1965. WR 120: 86
[Aberdeen Univ., Aberdeen, Scotland.]

Olney, P. J. S. THE FOOD AND FEEDING HABITS OF SHELDUCK TADORNA TADORNA. Ibis 107(4): 527-532. Oct. 1965. WR 120: 87

[Royal Soc. Protection Birds, Sandy, Bedfordshire, England.] The feeding behavior of shelduck, and a number of other birds, is apparently closely related to the cyclic behavior pattern of the main food species, H. ulvae. It seems that shelduck have a rather fixed type of feeding behavior which exploits only one feeding niche and therein mainly one food item. Any event (prolonged gales or very cold weather) which prevents the bird from using that niche can be the cause of heavy mortality.--From summ.

Philippona, J. DE LAGE GRASLANDEN BIJ BEETSTERSWAAG EN GORREDIJK ALS PLEISTERPLAATS VAN GANZEN EN ANDERE VOGELS. [THE LOW-LYING GRASSLANDS NEAR BEETSTERZWAAG EN GORREDIJK, PROVINCE OF FRIESLAND, NETHERLANDS, AS A WINTERING CENTER FOR GEESE AND OTHER WATER FOWL.] Levende Nat. 64(4): 91-96, illus. 1961. [From Biol. Abstr. 46(2), 1965. In Dutch.] WR 120: 87

A vast grassland area in the vicinity of Beetsterzwaag and Gorredijk in the Province of Friesland is the most important wintering area for geese and other waterfowl in interior Netherlands. This is caused by large scale inundation of the area in winter. If the plans to improve the drainage of this area are carried out, this will lead to a drastic reduction of the number of species and individuals of birds. Of various species of waterfowl observed here in winter, Anser albifrons predominates.

Pretsov, N. A., and V. E. Flint. [THE DIET OF THE EIDER OF THE KANDALKSHA PRESERVE AND ITS ROLE IN THE DYNAMICS OF THE LITTORAL FAUNA.] Trudy Kandalakshskogo Gos. Zapovednika 4: 7-28. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 4I277. Transl. of Russian abstr. Original with English summ.] WR 120: 87

Szijj, Josef. BESTAND DES HÖCKERSCHWANS (CYGNUS OLOR) AM BODENSEE. [THE HUMP-BACKED SWAN (CYGNUS OLOR) POPULATION AT BODENSEE.] Vogelwarte 22(2): 80-84, illus., map. 1963. [From Biol. Abstr. 46(5), 1965. In German.] WR 120: 87

Wojtusiak, Roman J. WIELKIE MIGRACJE PTAKÓW MORSKICH. [GREAT MIGRATIONS OF SEA BIRDS.] Kosmos 12(1): 85-90, illus. 1963. [From Biol. Abstr. 46(5), 1965. In Polish.] WR 120: 87

[Polish Copernicus Soc. Polish Nat., Warsaw, Poland.]

Yocom, Charles F., and Stanley W. Harris. PLUMAGE DESCRIPTIONS AND AGE DATA FOR CANADA GOOSE GOSLINGS. J. Wildl. Mgmt. 29(4): 874-877, 1 fig. Oct. 1965. WR 120: 87

[Humboldt State Coll., Arcata, Calif.] Abstract: Eight stages of plumage development and the equivalent age in days are presented for goslings of great basin Canada geese (Branta canadensis moffitti), which permit the field-aging of Canada geese broods between the time of hatching and the time of flying.

## CRANES, RAILS, SHOREBIRDS

Borowski, S. WPLYW CZYNNIKÓW EKOLOGICZNYCH NA LEGI BOCIANA BIAŁEGO CICONIA CICONIA (L.) W BIAŁOWIEZY W ROKU 1960. [EFFECT OF ECOLOGICAL FACTORS ON THE BREEDING OF THE WHITE STORK, CICONIA CICONIA (L.) IN BIAŁOWIEZA IN 1960.] Przeglad Zool. 7(1): 60-62, illus. 1963. [From Biol. Abstr. 46(4), 1965. In Polish with English summ.] WR 120: 87

[Dept. Mammal Res., Polish Acad. Sci., Białowieza, Poland.]

Braaksma, S. HET VOORKOMEN VAN DE STORMMEEUW (LARUS CANUS L.). [THE OCCURRENCE OF THE COMMON GULL (LARUS CANUS L.).] Limosa 37: 58-95. 1964. [From Ibis 107(4), 1965. In Dutch.] WR 120: 88

Over 600 pairs of common gulls bred in at least 26 localities in Holland in 1962. The possible causes of the large increase during the past 50 years are discussed.

Ehlert, Wilfrid. ZUR OKOLOGIE UND BIOLOGIE DER ERNAHRUNG EINIGER LIMIKOLEN-ARTEN. [ON THE ECOLOGY AND BIOLOGY OF NUTRITION OF SOME SPECIES OF SHOREBIRDS.] J. Ornithol. 105(1): 1-53. 1964. [From Biol. Abstr. 46(10), 1965. In German.] WR 120: 88

Hudson, M. J. BILL-CLAPPERING DISPLAY IN THE COMMON HERON ARDEA CINEREA. Ibis 107(4): 460-465, 2 figs. Oct. 1965. WR 120: 88

[Nature Conservancy, High Halstow, Rochester, Kent, England.] Summary: Bill-clappering is shown to be a normal feature of the early phases of the breeding cycle in the Common Heron Ardea cinerea and the circumstances of its occurrence are described. Possible origins of this behaviour and its probable function are suggested. An attempt is made to show the development of Ciconiiform display from the integration of more simple patterns. The significance of bill-clappering in the Common Heron appears to lie in the fact that it suggests an ancestral type of behaviour from which the complex display of the White Stork has evolved.

Ling, R. G. [STEREOTYPED BEHAVIOR OF SOME SPECIES OF SHORE BIRDS AND LARIDAE DURING NESTING.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 109-110. 1963. [From Biol. Abstr. 46(9), 1965, from Referat. Zhur., Biol., 1964, no. 12I179. In Russian.] WR 120: 88

Martinson, R. Kahler. WOODCOCK HARVEST, 1961. Game Res. Ohio 2: 47-49. Aug. 1963. WR 120: 88

[19 E. Villard, Dickinson, N. Dak.] Abstract: A mail questionnaire concerning woodcock hunting in Ohio was sent to 312 hunters who had indicated, on an upland game questionnaire, that they hunted woodcock. A 51 per cent return was realized from the mailing and 94 of the 159 respondents reported that they had hunted woodcock during the 1961 season for that species. The responding hunters flushed 1.623 woodcock and killed 0.536 per gun hour. These hunters spent an average of 2.8 hours hunting woodcock during the 1961 season. The majority of the hunting trips reported by these people were made in the northeastern part of the state; hunting success was the highest in this area also.

Martinson, R. Kahler. WOODCOCK SINGING GROUNDS SURVEY, 1961. Game Res. Ohio 2: 45-46. Aug. 1963. WR 120: 88

[19 E. Villard, Dickinson, N. Dak.] Abstract: Ten woodcock singing ground routes were run in Ohio in 1961. At a total of 102 stops, 108 birds were counted, for an average of 1.06 birds per stop. The limited coverage in Ohio precludes any detailed analysis or conclusions.

Mavas, J. R. COMPORTAMIENTO AGRESIVO DE FULICA ARMILLATA VIEILLOT (AVES, RALLIDAE). [THE AGGRESSIVE BEHAVIOR OF FULICA ARMILLATA VIEILLOT (AVES, RALLIDAE).] Rev. Mus. Argentino Cienc. Nat. Bernardino Rivadavia Cienc. Zool. 6(3): 103-129, illus. 1960. [From Biol. Abstr. 46(4), 1965. In Spanish with English summ.] WR 120: 88

Aggressive displays of the coot Fulica armillata are described and are compared with the displays of other coots including the red-fronted coot (F. rufifrons) and the whitewinged coot (F. leucoptera). An analysis is also made of the role of the sexes in aggressive displays.

Noskiewicz, Jerzy. SPSTRZEZENIA NAD BIOLOGIA CZAPLI SIWEJ, ARDEA CINEREA L. [OBSERVATIONS ON THE BIOLOGY OF GREY HERON, ARDEA CINEREA L.] Przeglad Zool. 8(1): 69-74, illus. 1964. [From Biol. Abstr. 46(6), 1965. In Polish with English summ.] WR 120: 89
[Western Pomeranian Museum, Szczecin, Poland.]

Pergolani De Costa, Maria Juan. GALLARETAS. [GRUIFORM BIRDS FOUND IN ARGENTINA.] Anal. Soc. Rural Argent. 98(9): 32-34, illus. 1964. [From Biol. Abstr. 46(13), 1965. In Spanish.] WR 120: 89
Brief description of Gruiformes, of which 6 spp. are found in Argentina: Fulicula leucoptera, F. rufifrons, F. armillata, found all over the country, and 3 other very uncommon spp. seldom found in the mountain ranges of the northwestern Andes.

Polivanova, N. N. [THE HERON POPULATIONS OF LAKE KHANKA.] Okrana Prirody na Dal'nem Vostoke (Vladivostok) 1: 123-131. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 9I116. Transl. of Russian abstr.] WR 120: 89

Sapetin, Ya. V. [SOME RESULTS OF BANDING CICONIFORMES IN THE PLAINS OF THE EASTERN AZOV REGION.] Trudy Oksk. Gos. Zapovednika 4: 225-249. 1962. [From Biol. Abstr. 46(11), 1965, from Referat. Zhur., Biol., 1963, no. 61221. Transl. of Russian abstr.] WR 120: 89

Sapetina, I. M. [IMPORTANCE OF THE WOODCOCK TO RECREATIONAL HUNTING ON LANDS OF THE EUROPEAN PART OF THE USSR.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 180-181. 1962. [From Biol. Abstr. 46(2), 1965, from Referat. Zhur., Biol., 1963, no. 12I244. In Russian.] WR 120: 89

Sauer, E. G. Franz. GEOGRAPHISCHE PRAGUNG, TAG- UND NACHTORIENTIERUNG TRANSOZEANISCH WANDERNDER PAZIFISCHER GOLDREGENPFEIFER (PLUVIALIS DOMINICA FULVA). [GEOGRAPHICAL IMPRINTING AND DAY- AND NIGHT ORIENTATION OF THE TRANSOCEANIC WANDERING PACIFIC GOLDEN PLOVER (PLUVIALIS DOMINICA FULVA).] Ergebnisse Biol. 26: 281-285, map. 1963. [From Biol. Abstr. 46(3), 1965. In German.] WR 120: 89
[Univ. Fla., Gainesville.]

Schuz, E. UBER DIE ZUGSCHEIDEN DES WEISSSTORCHS IN AFRIKA, UKRAINE UND ASIEN. [ON THE DIFFERENT MIGRATION PATHS OF THE WHITE STORK IN AFRICA, THE UKRAINE, AND ASIA.] Vogelwarte 22(2): 65-70, map. 1963. [From Biol. Abstr. 46(3), 1965. In German.] WR 120: 89

Strokov, V. V. [THE COMMON GULL IN THE REGION OF MOSCOW.] Okrana Prirody & Ozelenenie (Moscow) 4: 77-94. 1960. [From Biol. Abstr. 46(4), 1965, from Referat. Zhur., Biol., 1963, no. 4I159. Transl. of Russian abstr.] WR 120: 89

## HAWKS AND OWLS

Brull, Heinz. DAS LEBEN DEUTSCHER GREIFVOGEL. [LIFE OF THE GERMAN RAPTORES (BIRDS OF PREY).] Gustav Fischer Verlag (Stuttgart, Germany). 202 p., illus. 1964. Price DM 38. [From Biol. Abstr. 46(4), 1965. In German.] WR 120: 89
This well illustrated and documented volume includes the following topic headings: Introduction; Landscape and birds of prey; Working types; Physiological rhythms feathering and molting; Behavioral habits--in sexual function in general, in the predatory function; Behavior with respect to the prey and the biological area significance of predators, man as a changing figure of significance with respect to the prey, falconry as a world problem; Summary and conclusions. The volume also contains a subject index.



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Chauvire, C. CARACTERES OSTEOLOGIQUES DIFFERENTIELS DE QUELQUES STRIGIDES (OISEAUX DE PROIE NOCTURNES). [DIFFERENTIAL OSTEOLOGICAL CHARACTERS OF SOME STRIGIDAE. (NOCTURNAL BIRDS OF PREY).] Bull. Mens. Soc. Linn. Lyon 32(6): 166-172, illus. 1963. [From Biol. Abstr. 46(2), 1965. In French.] WR 120: 90
The bone structure of the skeletons of species of owl is compared using line drawings and descriptive material. According to these characters the tawny owl and the middle horned owl appear to be closely related, the marsh owl has some characters in common with these two, while the characteristics of the barn owl are different enough to warrant placing it in a separate subfamily.

Egorov, O. V., and Yu. V. Kabutin. [DATA ON THE ECOLOGY AND ECONOMIC IMPORTANCE OF THE OWL IN YAKUTIA.] Trudy Inst. Biol. Yakuts. Fil. Sibirsk. Otd. Akad. Nauk SSSR 6: 106-118. 1959. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1960, no. 100225. Transl. of Russian abstr.] WR 120: 90
"Buba buba."

Galushin, V. M. [THE GREATER SPOTTED EAGLE OF THE OKA RIVER VALLEY AND ITS ACTION ON THE SIZE OF SOME BIRD POPULATIONS.] Uch. Zap. Mosk. Gos. Pedagog. Inst. Im. Lenina 186: 115-151. 1962. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1963, no. 23I172. Transl. of Russian abstr.] WR 120: 90

Galushin, V. M., and B. Z. Golodushko. [TYPES OF VARIABILITY AND THE FACTORS WHICH DETERMINE THE SIZE OF PREDATORY BIRD HUNTING AREAS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 36-40. 1963. [From Biol. Abstr. 46(13), 1965, from Referat. Zhur., Biol., 1964, no. 11I232. Transl. of Russian abstr.] WR 120: 90

Krivonosov, G. A. [NESTING OF THE EAGLE OWL (BUBO BUBO) IN THE LOWER REACHES OF THE VOLGA RIVER.] Ornitologiya (Moscow) 6: 473. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 11I249. Transl. of Russian abstr.] WR 120: 90

Labutin, Yu. V. [HUMAN ACTIVITIES AND THE SIZE OF SOME PREDATORY BIRD POPULATIONS IN THE VERKHOYANSK AREA.] In: (Problems of conservation in Yakutiya.) (Yakutsk). p. 141-143. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 5I209. Transl. of Russian abstr.] WR 120: 90

Meylan, A. [DAYTIME PREDATORY BIRDS.] Agr. Romande (ser. A) 3(12): 98-101. Dec. 1964. [From Bibliog. Agr. 29(8), 1965. In French.] WR 120: 90
"Economic importance to agriculture."

Payne, R. S. PREY LOCATION IN OWLS (TYTO ALBA). Biol. Prototypes Synthetic Systems 1: 50. 1962. [From Biol. Abstr. 46(3), 1965.] WR 120: 90
[Cornell Univ., Ithaca, N. Y.] Abstract only.

Rykovskii, A. [DESTROY OR CONSERVE? THE EFFECT OF FEATHERED PREDATORS ON THE CONDITION OF STOCKS OF GAME.] Okhota & Okhotnich'e Khoz. 6: 22-24. 1963. [From Biol. Abstr. 46(3), 1965, from Referat. Zhur., Biol., 1964, no. 2I255. Transl. of Russian abstr.] WR 120: 90

Shibnev, B. K. [OBSERVATIONS OF THE BROWN FISH-OWL (KETUPA ZEYLONENSIS) IN USSURI KRAI.] Ornitologiya (Moscow) 6: 486. 1963. [From Biol. Abstr. 46(6), 1965, from Referat. Zhur., Biol., 1964, no. 11I251. Transl. of Russian abstr.] WR 120: 90

Soikkeli, Martti. UBER DAS UBERWINTERN UND DIE NAHRUNG DER WALDOHREULE (ASIO OTUS) IN SUDWESTFINNLAND 1962/63. [OVERWINTERING AND FOOD OF LONG-EARED OWL (ASIO OTUS) IN SOUTHWESTERN FINLAND 1962/63.] Ornis Fennica 41(2): 37-40. 1964. [From Biol. Abstr. 46(11), 1965. In German.] WR 120: 90
[Zool. Museum Univ. Turku, Turku, Finland.]

## BLACKBIRDS, STARLINGS, CROWS

Bailey, Edgar P., and A. W. Stokes. WHAT ABOUT UTAH'S STARLINGS? Utah Farm Home Sci. 25(2): 35, 48, 58-59, illus. 1964. [From Biol. Abstr. 46(1), 1965.] WR 120: 91
[Natl. Park Serv., Middlesboro, Ky.]

Beer, James R. VARIATION IN RED-WINGED BLACKBIRD EGGS. Passenger Pigeon 27 (2): 60-64, 1 fig., 3 pls. Summer 1965. WR 120: 91
[Univ. Minn., St. Paul.]

Kuroda, Nagahisa. THE COMPARATIVE ANALYSIS OF BREEDING RATES OF RURAL AND URBAN GREY STARLING COLONIES IN TOKYO AREA: II. 1. Misc. Rept. Yamashina's Inst. Ornithol. Zool. 4(11): 1-30. 1964. [From Biol. Abstr. 46(8), 1965.] WR 120: 91
[Yamashina's Inst. Ornithol. & Zool., Tokyo, Japan.]

Kuroda, Nagahisa. [UTILIZATION OF GROUP NEST-BOXES BY THE GREY STARLING AND EXPERIMENTS WITH COLOUR PAINTS.] Misc. Rept. Yamashina's Inst. Ornithol. Zool. 4(1): 42-52. 1964. [From Biol. Abstr. 46(8), 1965. In Japanese with English summ.] WR 120: 91
[Yamashina's Inst. Ornithol. & Zool., Tokyo, Japan.]

Orians, Gordon H., and Gerald Collier. COMPETITION AND BLACKBIRD SOCIAL SYSTEMS. Evolution 17(4): 449-459, illus. 1963. [From Biol. Abstr. 46(8), 1965.] WR 120: 91
[Univ. Wash., Seattle.]

Pilchard, E. I. EXPERIMENTAL TRANSMISSION OF TRANSMISSIBLE GASTROENTERITIS VIRUS BY STARLINGS. Am. J. Vet. Res. 26(114): 1177-1179, 2 figs. Sept. 1965. WR 120: 91
[Univ. Ill., Urbana.] Summary: Specific pathogen-free (SPF) pigs developed transmissible gastroenteritis (TGE) after ingesting droppings of adult starlings voided 1, 2, 4, 8, 16, and 32 hours after the starlings were fed TGE virus. Also, droppings of juvenile starlings were infective at 1, 2, 4, 8, and 16 hours. Droppings were collected up to 96 hours postfeeding. There was a linear relationship between -log 10 dilution of TGE virus suspensions and incubation period of the disease. The incubation period of TGE in SPF pigs ranged from 12 to 56 hours, with a mean of 27 hours.

Ray, Kenneth A. STARLINGS TAKING LIZARDS. British Birds 58(10): 439. Oct. 1965. WR 120: 91

Tenovuo, Rauno. ZUR BRUTZEITLICHEN BIOLOGIE DER NEBELKRAHE (CORVUS CORONE CORNIX L.) IM AUSSEREN SCHARENOF SUDWESTFINNLANDS. [BREEDING SEASON BIOLOGY OF THE HOODED CROW (CORVUS CORONE CORNIX L.) IN THE OUTER ARCHIPELAGO OF SOUTHWEST FINLAND.] Ann. Zool. Soc. Zool. Bot. Fenn. "Vanamo" 25(5): 1-147, illus., map. 1963. [From Biol. Abstr. 46(11), 1965. In German with English summ.] WR 120: 91
[Zool. Inst. Univ. Turku, Turku, Helsinki, Finland.]

## OTHER BIRDS

Bayes, J. C., M. J. Dawson, A. Holm Joensen, and G. R. Potts. THE DISTRIBUTION AND NUMBERS OF THE GREAT SKUA (STERCORARIUS S. SKUA BRUNN.) BREEDING IN THE FAEROES IN 1961. Dansk Ornithol. Foren. Tidsskr. 58(1): 36-41, map. 1964. [From Biol. Abstr. 46(2), 1965. In English with Danish summ.] WR 120: 91

OTHER BIRDS--Continued

Budd, G. M., and M. C. Downes. RECOLONIZATION OF HEARD ISLAND BY THE KING PENGUIN, APTENODYTES PATAGONICA. Emu 64(4): 302-315, 2 figs., 1 pl. July 1965. WR 120: 92

[School of Public Health & Tropical Med., Sydney, Australia.] Summary: A census conducted at Heard Island (latitude 53° S, longitude 73° E) in February and March by the 1963 ANARE Heard Island expedition showed that the island had been recolonized by the King Penguin, Aptenodytes patagonica, within the previous eight years. More than 100 King Penguins, of which 23 pairs were breeding, were seen. The two largest colonies were at Spit Bay, but breeding was also observed at three other beaches. Laying was estimated to begin in late November and continue at least until early March. Possible causes of the present increase in numbers of the King Penguin at Heard and other islands are discussed.

Burgerjon, J. J. SOME CENSUS NOTES ON A COLONY OF SOUTH AFRICAN CLIFF SWALLOWS PETROCHELIDON SPILODERA (SUNDEVALL). Ostrich 35(2): 77-85. 1964. [From Biol. Abstr. 46(3), 1965.] WR 120: 92

[62 Agassiz Drive, Winnipeg, Manitoba, Canada.]

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REPTILES AND AMPHIBIANS

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[Univ. Texas, Houston.] Natural history notes on 7 spp. of Colubridae: Natrix grahami, N. rhombifera, N. fasciata confluens, Thamnophis sauritus proximus, Heterodon platyrhinos, Opheodrys aestivus, Elaphe obsoleta lindheimeri; 1 sp. of Elapidae: Micrurus fulvius tenere; and 3 spp. of Crotalidae: Agkistrodon contortrix, Sisturus miliarius streckeri, and Crotalus horridus atricaudatus. New or additional information is provided on food habits, measurements and clutch or litter size of young. Most of the observations were made during field study in the Big Thicket near Dallardsville, Polk County, Texas.

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cycle is divided into six stages. The regions of the epidermis and the histological changes occurring in each stage are described. Each region is named and the nomenclature applied is homologized as far as possible with the terminology used by earlier workers. It is suggested that the liberation of the old, outer, keratinized epidermal generation at sloughing is effected by the destruction of a single layer of living cells by the possible proteolytic action of immigrant eosinophil granulocytes.

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